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Separate paging is given to this Part in order that it may be filed as a Separate Compilation.

PART IV-A

Rules and Orders (Other than those published in Parts I, I-A, and I-L) made by the Government of Gujarat under the Central Acts

LABOUR SKILL DEVELOPMENT AND EMPLOYMENT DEPARTMENT

NOTIFICATION

Sachivalaya, Gandhinagar, 11th December, 2025

OCCUPATIONAL SAFETY, HEALTH AND WORKING CONDITIONS CODE, 2020.

No.GR/2025/158/LED/BRC/e-file/11/2025/2193/M3:- The following draft of rules which is proposed to be issued under section 133 (2) (zzq) and section 135 (2)(za) of the Occupational Safety, Health and Working Conditions Code, 2020, (37 of 2020) (hereinafter referred to as "the Code") is published as required by section 133 (1) and section 135(1) of the Code for information of all persons likely to be affected thereby and notice is hereby given that the said draft rules will be taken into consideration by the Government of Gujarat on or after the expiry of forty-five days from the date of publication of this notification in the *Official Gazette*.

2. Any objection or suggestion which may be received by the Principal Secretary, Labour, Skill Development and Employment Department, Gandhinagar from any person with respect to said draft rules on or before the expiry of the aforesaid period will be considered by the Government.

DRAFT NOTIFICATION

OCCUPATIONAL SAFETY, HEALTH AND WORKING CONDITIONS CODE, 2020.

No. GR/2025/158/LED/BRC/e-file/11/2025/2193/M3:- In exercise of the powers conferred by section 133 (2) (zzq) and section 135 (2) (za) of the Occupational Safety, Health and Working Conditions Code, 2020, (37 of 2020), the Government of Gujarat hereby makes the following rules further to amend the Gujarat Occupational Safety, Health and Working Conditions Rules, 2025, namely:-

1. Short title and commencement:-

(1) This rules may be called the Gujarat Occupational Safety, Health and Working Condition (Amendment) Rules, 2025.

(2) They shall come into force on the date of its publication in the *Official Gazette*.

2. In the Gujarat Occupational Safety, Health and Working Conditions Rules, 2025 (hereinafter referred to as "the said rules"), after rule 2, the following rule shall be inserted namely: -

"2A:- Powers of Chief Inspector-Cum-Facilitator to Recognise any Person or Institution as 'Competent Person'-under section-2(1)(l). –

(1) The Chief Inspector-cum-Facilitator may recognize any person as a "Competent person", for such area and for such period as may be specified, for the purpose of carrying out tests, examination and inspections of such buildings, dangerous machineries, hoists and lifts , lifting machines and lifting tackles, pressure plants, confined spaces, ventilation systems and such other processes or plants and equipment's located in a factory, as stipulated in the Code and these rules, if such a person possesses the qualifications experience and other requirements as set out in the **Schedule** appended to this rule:

Provided that the Chief Inspector-cum-Facilitator may relax the requirements of qualifications (but not the requirements in respect of the facilities at the command of such a person) if such a person is exceptionally experienced and knowledgeable:

Provided further that where it is proposed to recognize a person employed under the Chief Inspector-cum-Facilitator as "Competent Person" recognized under this provision shall not be above age of 62 years and shall be physically fit for the purpose of carrying out the tests, examinations and inspections:

(2) The Chief Inspector-cum-Facilitator may recognize as a "Competent Person" for such area and for such period as may be specified by him any of the reputed institutions having persons possessing qualifications and experience as set out in the Schedule referred to in sub-rule (1) of this rule for the purpose of carrying out the tests, examinations and inspections of such building, dangerous machineries, hoists and lifts, lifting machineries and lifting tackles, pressure plants, confined spaces, ventilation systems and such other processes or plants and equipment as stipulated in the code and rules made there-under.

(3) The Chief Inspector-cum-Facilitator shall, on receipt of an application in the Form-37 a person and Form-38 for institution respectively, intending to be recognized as a "Competent person", register such application immediately, scrutinize application and interview by Chief Inspector-cum-Facilitator after having satisfied himself as regard competence and facilities available at the disposal of the applicant, either recognize the applicant as a "Competent person" and issue a certificate of competency in the Form-39.

(4) The Chief Inspector-cum-Facilitator may, after giving an opportunity to the person of being heard, revoke the certificate of competency,-

(i) if he has a reasons to believe that competent person, -

(a) has violated any of the conditions stipulated in the certificate of competency or;

(b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of the Code and rules or has omitted to act as required under the Code and rules; or

(ii) for any other reasons to be recorded in writing.

Explanation: - For the purpose of this rule, institution includes an organization.

(5) The Chief Inspector-cum-Facilitator may, for reasons to be recorded in writing required recertification of lifting machines, lifting tackles, pressure plants or ventilation systems, as the case may be, which has been or have been certified by a competent person of other State.

Schedule

Sr. No.	Section or Rule under which competency is Recognized	Qualification required	Experience for the purpose	Facilities at his command
(1)	(2)	(3)	(4)	(5)
1.	For Certificate of stability for buildings.	Degree in civil or Structural Engineering or equivalent	(i) A minimum of 10 years of experience to the design of construction or testing or repairs of structures; (ii) Knowledge of non-destructive testing various codes of practices that are current and the effect of the vibrations and natural forces on the stability of the building, corrosion test of metallic structure and (iii) Ability to arrive at a reliable conclusion with regard to the safety of the structure of the building.	• Ultrasonic pulse velocity test • Carbonation test • Chloride content • Sulphate content • pH content • core sampling and testing for compressive strength • filling the hole by non-shrink grout material • injection grouting
2.	For "**Dangerous Machines"**	Degree in electrical or mechanical or textile engineering or Its equivalent qualification	(i) A minimum of 7 years of experience in:- (a) design or operation maintenance; or (b) testing examination and inspection of relevant machinery, their guards, safety devices and appliances. (ii) He shall, - (a) be conversant with safety devices and their proper functioning: (b) be able to identify defects and any other cause leading to failure; and (c) have ability to arrive at a reliable conclusion with regard to the proper function of safety device and appliance and machine guard.	Gauges for Measurement; Instruments for Measurements of speed and any other equipment or device to determine the safety in the use of the dangerous machines.
3	For **Lift and hoist**	A degree in Electrical or Mechanical Engineering or its equivalent. Degree in mechanical or electrical or metallurgical engineering or its equivalent	(1) A minimum experience of 7 years in:- (a) design or erection or maintenance of lift and hoist or (b) testing, examination and Inspection of lifting machinery, chains, ropes and lifting tackles. (2) He shall be (a) conversant with current relevant codes of practices and test procedures; (b) conversant with fracture mechanics and metallurgy of the material of construction;	Facilities for load testing, tensile testing, gauges equipment / gadgets for measurements and any other equipment required for Determining the safe working conditions of Hoists and Lifts.

Sr. No.	Section or Rule under which competency is Recognized	Qualification required	Experience for the purpose	Facilities at his command
(1)	(2)	(3)	(4)	(5)
			(c) conversant with, heat treatment/ stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles; and (d) capable of identifying defects and arriving at a reliable conclusion with regard to the safety of lifting machinery, chains, and ropes and lifting tackles.	
4.	For **Lifting Machinery and lifting tackles.**	Degree in mechanical or electrical or metallurgical engineering or its equivalent	(i) A minimum experience of 7 years in:- (a) design or erection or maintenance, or (b) Testing, examination and Inspection of lifting machinery, chains, ropes and lifting tackles. (ii)He shall be (a) conversant with current relevant codes of practices and test procedures; (b) conversant with fracture mechanics and metallurgy of the material of construction; (c) conversant with, heat treatment/stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles; and (d) capable of Identifying defects and arriving at a reliable conclusion with regard to the safety of lifting machinery, chains, ropes and lifting tackles.	Fatuities for load testing, tensile testing, heat treatment, equipment/gadget for measurement gauges and such other equipment to determine the safe working conditions of the lifting machinery tackles.
5.	For Pressure Plant & reaction vessel & kettels	Degree in chemical or metallurgical or Mechanical engineering or Its equivalent.	(i) A Minimum experience of 10 years in:- (a) design or erection or maintenance; or (b) testing, examination and Inspection of pressure plants. (ii) He shall be, - (a) conversant with the relevant codes of practices and test procedures relating to the pressure vessels; (b) conversant with statutory requirements concerning the safety of unfired pressure vessels and equipment operating under pressure:	Faculties for carrying out hydraulic test, non- destructive test, gauge equipment/ gadgets for measurement and any other equipment or gauges to determine the safety In the use of pressure vessels:

Sr. No.	Section or Rule under which competency is Recognized	Qualification required	Experience for the purpose	Facilities at his command
(1)	(2)	(3)	(4)	(5)
			(c) conversant with non- destructive testing techniques as are applicable to pressure vessels; and (d) able to identify defects and arrive at a reliable conclusion with regard to the safety of pressure plants.	
6.	(i) For Precautions against dangerous fumes and hazards of ship breaking	Master's Degree In Chemistry or a degree In chemical Engineering or degree in mechanical engineering or master of industrial hygiene & safety .	(i) A minimum experience of 7 years in collection and analysis of environmental samples and calibration of monitoring equipment; (ii) He shall: - (a) be conversant with the hazardous properties of chemicals and their permissible limit values; (b) be conversant with the current techniques of sampling, and analysis of the environmental contaminants; and (c) be able to arrive at a reliable conclusion as regard the safety in respect of entering and carrying out hot work.	Meters, Instruments and devices duly calibrated and Certified for carrying out the tests and certification of safety in working in confined spaces.
7.	Ventilation system as required under various Schedule framed such as (i) grinding or glazing of metals and processes incidental thereto. (ii) cleaning or smoothening, roughing etc. of articles, by a Jet sand, metal shot or grit or (iii) other abrasives propelled by a blast of compressed air or steam	Mechanical or electrical engineering degree or Its equivalent.	(i) A minimum experience of 7 years in or Electrical the design. Fabrication, installation, Engineering or testing of ventilation system and equivalent. Systems used for extraction and collection of dusts, fumes and vapours and ancillary equipment, (ii) He shall be conversant with current relevant codes of practice and test procedures in respect of ventilation and extraction system for fumes and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system.	Facilities for testing the ventilation system instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapours and fumes, and any other equipment needs for determining the efficiency and adequacy of these systems. He shall have the assistance of suitable qualified technical persons who can come to a reasonable conclusion as to the adequacy of the system.

Sr. No.	Section or Rule under which competency is Recognized	Qualification required	Experience for the purpose	Facilities at his command
(1)	(2)	(3)	(4)	(5)
	(iv) handling and processing of asbestos (v) manufacture of Rayon by Viscose process (vi) foundry operation			
8.	Fire Protection and Means of access: (i) Floor, stairs and means of access (ii) The fire and explosion prevention and protection	Mechanical or Electrical or Chemical or Fire engineering degree or its equivalent	(i) A minimum experience of 10 years in the field of (a) production, maintenance in chemical plants (b) shall be conversant with current codes of practice and of fire and its related system.	

3. In the said rules, in rule 9, after clause (b), the following clause shall be added namely: -

"(c) The qualified medical officer shall have qualification included in schedules to the Indian Medical Degree Act, 1916 or in the Schedule to the Indian Medical Council Act 1956 and possesses a certificate of training in industrial health of minimum three months' duration recognised by the State Government or AFIH granted by DGFASLI.".

4. In the said rules, in rule 18, in sub-rule (1), in clause (b), for the words "Medical Officer", the words "Qualified Medical Officer" shall be substituted.

5. In the Gujarat Occupational Safety, Health and Working Condition Rules, 2025 (herein after referred to as "the said Rules"), after Rule-25 the following new Rule 25A shall be inserted namely:

Rule-25A. Power to make exempting orders for Factories/Building or other construction work under section 27. –

(1) The Chief Inspector cum facilitator may by written order exempt, on such conditions as it or he may deem expedient, any or all of the adult workers in any factory or group or class or description of factories/ Building or Other Construction work from any or all of the provisions of sub Section (1) of section 25 on the ground that the exemption is required to enable the factory or factories/Building or Other Construction work to deal with an exceptional pressure of work.

(2) Any exemption granted under sub-rule (1) shall be subject to the following conditions, namely; -

(i) the total number of hours of work including overtime shall not exceed twelve;

(ii) the spread over, inclusive of intervals for rest, shall not exceed thirteen hours in any one day;

(iii) the total number of work in any week, including overtime, shall not exceed seventy-two;

(iv) no worker shall be allowed to work overtime, for more than seven days at a stretch and the total number of hours of overtime work in any quarter shall not exceed one hundred and forty-four hours.

Explanation. –quarter means period of three consecutive months beginning on the first day of the month

6. In the said rules, in the rule 39, in sub-rule (8),

(i) in clause (a), the following para shall be inserted, namely: -

"The copy of the closure order shall have to be sent to Electricity Department, Local Body and any other Government Authority to act forthwith to the order.".

(ii) in clause (b), the following para shall be added, namely: -

"Or, On submission of duly notarized affidavit by the occupier of the factory on proper stamp paper indicating satisfactory corrective actions and compliance of closure order"

7. In the said rules, after rule 83, the following rules shall be inserted, namely: -

83A:-The following operations when carried on in any factory are declared to be dangerous manufacturing process or operations under section 82 of the Code, 2020.

I. Ovens and Driers

II. Thermic Fluid heaters

III. Manufacture of aerated water and processes incidental thereto

IV. Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold etc.

V. Manufacture and repair of electric accumulators

VI. Glass manufacture

VII. Grinding or glazing of metals and processes incidental thereto

VIII. Manufacture and treatment of lead and certain compounds of lead

IX. Generation of gas from dangerous petroleum as defined in clause (b) of Sec. 2 of the Petroleum Act, 1934

X. Cleaning, smoothing, roughening or removing of any part of the surface of articles, by a jet of sand, metal shot, or grit or other abrasive propelled by a blast of compressed air or steam

XI. Liming and tanning of raw hides and skins processes incidental thereto

XII. Manufacture of chromic acid or manufacture of recovery of the bichromate of sodium or potassium or ammonium

XIII. Manufacture or Manipulation of carcinogenic dye intermediates

XIV. Manipulation of acids or alkalis

XV. Manufacture of bangles and other articles from cinematograph film and toxic and inflammable solvents

XVI. Processes Involving manufacture, use or evolution of carbon disulphide and hydrogen sulphide

XVII. Manufacture and manipulation of dangerous pesticides, Fungicides, Herbicides and other Pesticides

XVIII. Compression of Oxygen and Hydrogen produced by electrolysis of water

XIX. Handling and processing of Asbestos Manufacture of any Article of Asbestos and any other process of manufacture or otherwise, in which asbestos is used in any form

XX. Manufacture of articles from refractory materials including manufacture of refractory bricks

XXI. Chemical Works

XXII. Manufacture, Handling and Usage of Benzene and Substances containing Benzene.

XXIII. Process of extracting oils and fats from vegetables and animal sources in Solvent extraction plants

XXIV. Manufacturing process or operations in Carbon Disulphide plants

XXV. Operations involving High Noise levels

XXVI. Welding/cutting Operation with the use of LPG/Acetylene/Argon

XXVII. Manufacture of pottery

XXVIII. Operations in Foundries

XXIX. Handling and Processing of Cotton

XXX. Ship building, ship-repairing, and ship-breaking

1. The provisions specified in the Schedule I to Schedule XXX annexed hereto shall apply to such class or description of factories wherein dangerous operations or manufacturing process specified in each Schedule are carries out.

2. Every worker employed in the said processes or operations of any Schedule annexed shall necessarily be re-examined by medical officer (Certifying Surgeon) periodically specified in the Schedule. Factory medical officer shall also entered the nature of tests and results in health register in Form-45

3. Notwithstanding anything contained in the Schedules annexed to this rule, Inspector-cum-facilitator may issue order in writing to the occupier, directing him to carry such measures, and within such time, as may be specified in such order with a view to remove conditions dangerous to the health of the worker or to suspend any process, where such process constitutes in opinion of the Inspector-cum-Facilitator imminent danger of poisoning or toxicity.

4. All the provisions of the Code and the Rules made there under shall apply to the dangerous operations specified in all Schedules of rule 83A wherein manufacturing process is carried on with or without the aid of power or is so ordinarily carried on, notwithstanding that the persons working therein are not employed by the owner / occupier thereof but are working with the permission of or under agreement with such owner / occupier and 5 or more workers are working on any day of the preceding twelve months.

Schedule I-Ovens and Driers

1. Application.— This Schedule shall apply to ovens and driers, except those used in laboratories or kitchens of any establishment and those which have a capacity below 325 lit.

2. Definition.— For the purpose of this Schedule, oven or drier means any enclosed structure, receptacle, compartment or box which is used for backing, drying or otherwise processing of any article or substance at a temperature higher than the ambient temperature of the air, in the room or space in which the oven or drier is situated, and in which a flammable or explosive mixture of air and a flammable substance is likely to be evolved within the enclosed structure, receptacle, compartment or box or part thereof on account of the article or substance which is baked, dried or otherwise processed within it;

3. Separate electric connection. — Electrical power supplied to every oven or drier shall be by means of a separate circuit provided with an isolation switch.

4. Design, construction, examination and testing.—

(a) Every oven or drier shall be properly designed on sound engineering practice and be of good construction, sound material and adequate strength, free from any patent defects and safe if properly used.

(b) No oven or drier shall be taken into use in a factory for the first time unless a competent person has thoroughly examined all its parts and carried out the tests as are required to establish that the necessary safe system and controls provided for safety in operation for the processes for which it is to be used and a certificate of such examination and tests signed by the competent person has been obtained and is kept available for inspection;

(c) All parts of an oven or drier which has undergone any alteration or repair which has the effect of modifying any of the design characteristics, shall not be used unless a through examination and tests, as have been mentioned in clause (b), has been carried out by a competent person and a certificate of such examination and tests signed by that competent person has been obtained and is kept available for inspection;

5. Safety ventilation.—

(a) Every oven or drier shall be provided with a positive and effective safety ventilation system using one or more motor-driven centrifugal fans so as to dilute any mixture of air and any flammable substance that may be formed within the oven or drier and maintain the concentration of the flammable substance in the air at a safe level of dilution.

(b) The safe level of dilution referred to in sub-clause (a) shall be so as to achieve a concentration of the concerned flammable substance in air of not more than 25 per cent of its lower explosive limit;

Provided that a level of concentration in air upto 50 per cent of the lower explosive limit of the concerned flammable substance may be permitted to exist subject to installation and maintenance of an automatic device which—

(i) shows continuously the concentration of the flammable substances in air present in the oven or drier at any instant.

(ii) Sound an alarm when the concentration of the flammable substance in air in any part of the oven or drier reaches a level of 50 per cent of its lower explosive limit; and

(iii) Shuts down the heating system of the oven or driver automatically when the concentration in air of the flammable substance in any part of the oven or drier reaches a level of 60 per cent of its lower explosive limits, is provided to the oven or drier and maintained in efficient working condition;

(c) No oven or drier shall be operated without its safety ventilation system working in an efficient manner;

(d) No oven or drier shall be operated with a level of dilution less than what is referred to in sub-clause (b).

(e) Exhaust ducts of safety ventilation systems should be so designed and placed that their ducts discharge the mixture of air and flammable substance away from the workrooms and not near windows or doors or other opening from where the mixture could re-enter the workrooms;

(f) The fresh air admitted into the oven or drier by means of the safety ventilation system shall be circulated adequately by means of circulating fan or fans through all parts of the oven or drier so as to ensure that there are no locations where the flammable substance can accumulate in the air or become – Docketed to any dangerous degree.

(g) Throttling dampers in any safety ventilation system should be so designed by cutting away a portion of the damper or otherwise, that the system shall handle at least the minimum ventilation rate required for safety when they are set in their maximum throttling position.

6. Explosion panels.—

(a) Every oven or drier having an internal total space of not less than half-cubic meter shall be provided with suitably designed explosion panels so as to all allow release of the pressure of any possible explosion within the oven or drier through explosion vents. The area of openings of any access doors which are provided with suitable arrangements for their release in case of an explosion shall be not less than 2200 square centimeters for every-one cubic meter of volume of the oven or drier. The design of the explosion panels and doors as above said shall be such at to secure their complete release under an internal pressure of 0.25kg. per square centimeter.

(b) The explosion releasing panels, shall as far as practicable, be situated at the roof of the oven or drier or at those portions of the walls where persons do not remain in connection with operation of the oven and drier.

7. Interlocking arrangements.—

(a) In each oven or drier efficient inter-locking arrangement shall be provided and maintained to ensure that –

(i) All ventilating fans and circulating fans whose failures would adversely effect the ventilation rate of flow pattern, are in operation before any mechanical conveyer that may be provided for feeding the articles or substances to be processed in the oven or drier is put into operations;

(ii) Failure of any of the ventilating or circulating fans will automatically stop any conveyer as referred to in sub-clause (i) as may be provided as well as stop the fuel supply by closing the shut off valve and shut

off the ignition in the case of gas or oil fired ovens, and in the case of electrical heated ovens switch off the electrical supply to the heaters;

(iii) The above said mechanical conveyer is set in operation before the above said shut off valve can be energized; and

(iv) The failure of the above said conveyer shall automatically close the above said shut off valve in the case of ovens and driers heated by gas, oil or steam and deactivate the ignition system, or cut off the electrically heated ovens or furnaces.

8. Automatic preventilation

Every oven or drier heated by oil, gas, steam or electricity shall be provided with an efficient arrangement for automatic preventilation consisting of at least 3 volume changes with fresh air by operation of safety ventilation fans and the circulating fans (if used) so as to effect purging of the oven or drier of any mixture of air and a flammable substance before the heating system can be activated and before the conveyer can be placed in position;

9. Temperature control. —

Every oven or drier shall be provided with an automatic arrangement to ensure that the temperature within does not exceed a safe upper present limit to be decided in respect of the particular proceeding being carried on.

10. Multistage processes.—

Whenever materials are to be processed in ovens or drier in successive operations, suitable arrangement shall be provided to ensure that the operating temperatures necessary for safe operation at each stage are maintained within the design limits.

11. Combustible substances not to drip on electrical heaters or burners flame.—

Effective arrangements shall be provided in every oven or drier to prevent dripping of combustible substances on electric heaters or burner flame used for heating.

12. Periodical examination, testing and maintenance.—

(a) all parts of every oven and drier shall be properly maintained and thoroughly examined and the various controls as mentioned in this Schedule and the working of the oven or drier tested at frequent intervals to ensure its safe operation by a responsible person designated by the occupier or manager, who by his experience and knowledge of necessary precautions against risks of explosion, is fit to undertake such work.

(b) A register shall be maintained in which the details of the various tests carried out from time to time under clause (a) shall be entered and every entry made shall be signed by the person making the tests.

13. Training of operator. —

No person shall be assigned any task connected with operator of any oven or drier unless he has completed 18 years of age and he is properly trained.

14. Polymerizing machine

(a) Printed fabric shall be thoroughly dried by passing them over drying cans or through hot flue or other equally effective means, before the same is allowed to pass through polymerizing machines.

(b) Infra-red ray heaters of polymerizing shall be cut off while running the prints.

Schedule II. Thermic Fluid heaters

1. All heaters shall be of such construction that coils are removable for periodic cleaning, visual inspection and hydraulic test.

2. Suitable arrangements shall be made for cooling the furnace effectively in case of power failure.

3. Before restarting the furnace, it shall be effectively purged.

4. Velocity of flow of the thermic fluid shall not be allowed to fall below the minimum recommended by the manufacturers while the heater is in operation.

5. The thermic fluid shall be circulated in a closed circuit formation with an expansion cum-decorator tank. The tank shall be located outside the shed where the heater is installed.

6. Every heater shall be provided with photo-register actuated audio-visual alarm to indicate flame failure and automatic burner cut off.

7. The stack temperature monitor-cum-controller with audio-visual alarm shall be provided so as to warm the operator in case the outlet temperature exceeds the specified minimum.

8. Where inspection doors are provided on the furnace they shall be interlocked with the burner itself so that they cannot be opened until burner is shut off and furnace is cooled sufficiently.

9. All heaters shall also be provided with the following safety devices :

   a. level control in the expansion tank;

   b. temperature control of thermic fluid;

   c. differential pressure switch on the out-let line of the heater tubes; and

   d. temperature control device for the fuel oil supply to the burner

10. All devices mentioned in clause (9) shall have interlocking arrangement with burner so that in case of any predetermined limits being crossed, the supply of fuel and air to burner shall automatically be cut-off.

11. All safety interlocks when operated shall be indicated on the control panel of the heater by a suitable audio visual alarm.

12. Every heater unit shall be provided as a standard accessory an arrangement for sniffing with low pressure stem of nitrogen for putting out the fire.

13. Electronic panel for the heater shall be located near the heater but not so close as to be exposed to spilling or leaking oil.

14. The heater shall be located in a place segregated from other manufacturing activities.

15. Explosion vent shall be so installed that release takes place at safe location.

16. The heater coil shall be subjected to pressure test by component person once at least in every 12 month. The test pressure shall not be less than twice the operating pressure.

17. If repairs are carried out to the coil it shall be tested before taking it into use.

18. The thermic fluid shall confirm to the specifications prescribed by the manufacturers and shall be tested by competent person for suitability at least once in every three months period. Such test shall include test for acidity suspended matter; ash viscosity and than point.

19. Cleaning of the internal surface of the heater or soot and checkup of refractory surface on the inside shall be carried out every month or as often as required depending upon working conditions. The coils shall be removed and surface of the coils cleaned thoroughly once at least in a period of six months. The burner, nozzles oil filters and pumps shall be cleaned once a week during the period of use.

20. A separate register containing the following information shall be maintained :

   a. Weekly check carried confirming the effectiveness of the interlock :

   b. Weekly checks confirming that all accessories are in good state of repairs; and

   c. Information regarding fuel oil temperature, pressure, thermic fluid inlet/outlet pressure and temperature, fuel gas temperature, recorded at 4 hourly intervals.

21. The heater, when in operation shall always be kept in charge of a trained operator.

Schedule III. Manufacture of aerated water and processes incidental thereto

1. Fencing of machines.-

All machines for filling bottles or siphons shall be so constructed, placed or fenced as to prevent, as far as may be practicable, a fragment of a bursting bottle or siphon from striking any person employed in the factory.

2. Face-guards and gauntlets.-

(1) The occupier shall provide and maintain in good condition for the use of all persons engaged in filling bottles or siphons-

(a) Suitable face-guards to protect the face, neck and throat and

(b) Suitable gauntlets, for both arms to protect the whole hand and arms:

Provided that-

(i) paragraph 2 (1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of bursting bottle can escape, and

(ii) Where a machine is so constructed that only one arm of the worker at work upon it is exposed to danger, a gauntlet need not be provided of the arm which is not exposed to danger.

(2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowning screwing, wiring, foiling capsuling, sighting or labeling bottles or siphons,

(a) Suitable face-guards to protect the face, neck and throat, and

(b) Suitable gauntlets for both arms to protect the arms and at least half of the palm and the space between the thumb and forefinger.

3. Wearing of face guards and gauntlets.-

All persons engaged in any of the process specified in paragraph 2 shall, while at work in such process, wear the face- guards and gauntlets provided under the provisions of the said paragraph.

Schedule IV. Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold etc.

1. Definitions.- For the purpose of this Schedule –

(a) "electrolytic process" means the electrolytic plating or oxidation of metal articles by the use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold, etc;

(b) "bath" means any vessel used for an electrolytic process or for any subsequent process; and

(c) "employed" means employed in any process involving contact with liquid from a bath.

2. Exhaust draught.-

An efficient exhaust draught shall be applied to every vessel in which an electrolytic process is carried on. Such draught shall provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work is carried on.

3. Prohibition relating to women and young persons.-
No lactating mother and pregnant women, adolescent or child shall be employed or permitted to work at a bath.

4. Floor of workrooms.-
The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at leas once a day.

5. Protective devices.-

(1) The occupier shall provide and maintain in good and clean condition the following articles of protective devices for the use of all persons employed on any process at which they are liable to come in contact with liquid from a bath and such devices shall be worn by the persons concerned -

(a) Waterproof aprons and bids; and

(b) for persons actually working at a bath, loose fitting, rubber gloves and rubber boots or other footwear, and chemical goggles,

(2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and drying of protective devices

6. Water facilities.-

(1) There shall be provided and maintained in good repairs for the use of all persons employed in electronic process and processes incidental to it -

(a) a wash place undercover, with either-

(i) a trough with a smooth impervious surface fitted with a waste pipe, and of sufficient length to allow at least 60 cms. for every 5 persons employed at any one time, and having a constant supply of water room taps or jobs above the trough at intervals of not more than 60 cms. or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and having a constant supply of water laid on.

(b) a sufficient supply of clean towels renewed daily, and soap or other suitable cleaning material.

(2) In addition to the facility in sub-paragraph 1, an approved type of emergency shower with eye fountain shall be provided and maintained in good working order. Wherever necessary, in order to ensure continuous water supply, storage tank of 1500 liters capacity shall be provided as a source of clean water for emergency use The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at leas once a day.

7. Floor of workrooms.-

The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at leas once a day.

CAUTIONARY NOTICE

Electrolytic plating

(1) Chemicals handled in this plant are corrosive and poisonous.

(2) Smoking chewing tobacco, eating food or drinking, in this area is prohibited. No food stuff or drink shall be brought in this area.

(3) Some of these chemicals may be absorbed through the skin and may cause poisoning.

(4) A good wash shall be taken before meals.

(5) Protective devices supplied shall be used while working in this area.

(6) Spillage of the chemicals on any part of the body or on the floor shall be immediately washed away with water.

(7) All workers shall report for the prescribed medical rest regulars to protect their own health.

8. Medical facilities and record of examination and tests.-

(1) The occupier of every factory in which electrolytic processes are carried on shall-

(a) employ a factory medical officer for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector-cum-Facilitator;

(b) provide to the said medical practitioner all the necessary facilities of the purpose referred to in clause (a); and

(c) Maintain a sufficient supply of suitable barrier cream, ointment and impermeable water proof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping these substances. In case cyanides are used in the bath, the box shall also contain an emergency cyanide kit.

(2) The medical practitioner shall examine all workers before they are employed in electrolytic processes. Such examination in case of chrome plating shall include inspection of hands, forearms, and nose, and shall be carried out at least once in every fortnight.

(3) The record of the examinations referred to in sub-paragraph (2) shall be maintained in a separate register approved by Chief Inspector-cum-Facilitator which shall be kept readily available for inspection by the Inspector.

9. Medical Examination by the Certifying Surgeon.-

1 Every worker employed in the electrolytic processes shall be examined by a Certifying Surgeon before his first employment. Such examination shall include X-ray of the chest and-

(a) in case of chromium plating include examination for nasal septum perforation and test for chromium in urine;

(b) in case of nickel plating, test for nickel in urine; and

(c) in case of cadmium plating, test for cadmium in urine and 2 micro globulin in urine.

2 No worker shall be employed in any electrolytic process unless certified fit for such employment by the certifying surgeon.

3 Every worker employed in the electrolytic processes shall be re-examined by a certifying surgeon at least once in every year except in case of the workers employed in cadmium, chromium and nickel plating processes for whom this examination shall be carried out once in every six months, such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified under sub-paragraph (1) excluding the X-ray of the chest which shall not be required to be carried out earlier than once in three years.

4 the Certifying Surgeon after examining a worker, shall issue Certificate of Fitness in Form 24, the record of Examinations carried out shall be kept in custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register on Form 42.

5 The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

6 if at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the electrolytic processes on the ground that continuous therein would involve danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register, the entry of his findings in those documents shall also include the period for which he considers that the said person is unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

7 No person who has been found unfit to work as specified in sub-paragraph (6) shall be re-employed or permitted to work in the said process unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

Schedule V. Manufacture and repair of electric accumulators

1. Savings.-

This Schedule shall not apply to the manufacture or repair of electric accumulators or part thereof not containing lead or any compound of lead; or to the repair on the premises, of any accumulator forming part of a stationary battery.

2. Definitions.-For the purpose of this Schedule:-

(a) "Lead Process" means the melting of lead or any material containing lead, casting, burning, or any other work, including trimming, or any other abrading or cutting of pasted plated, involving the use, movement or manipulation of, contact with, any oxide of lead.

(b) "Manipulation of raw oxide of lead" means any lead process involving any manipulation or movement of raw oxides of lead other than is conveyance in a receptacle or by means of an implement from one operation to another.

(c) "Suspension" means suspension from employment in any lead process by written certificates in the Health Register **Form 42** signed by the Certifying Surgeon, who shall have power of suspensions as regards all persons employed in any such process.

3. Prohibition relating to women and young persons.-

No lactating mother and pregnant women or young person shall be employed or permitted to work in any lead process or in any room in which the manipulation of raw oxide of lead pr pasting is carried on.

4. Separation of certain processes.-

Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another, and from any other process:

(a) manipulation of raw oxide of lead;

(b) pasting;

(c) drying of plates:

(d) formation with lead burning ("tacking") necessarily carried on in connection therewith;

(e) melting down of pasted plates;

(f) The grid casting shop.

5. Air space.-

In every room in which lead process is carried on, there shall be least 14.2 cubic meters of air for each person employed therein and in computing this air space no height over 3.7 meters shall be taken into account.

6. Ventilation.-

Every work-room there shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.

7. Distance between workers in pasting room.-

In every pasting room the distance between the centre of the working position of any paste and that the paster working nearest to him shall not be less than 1.5 meters.

8. Floor of work-rooms.-

(1) The floor of every room in which a lead process is carried on shall be-

(a) of cement or similar material so as to be smooth and impervious to water;

(b) maintained in sound condition;

(c) Kept from materials, plant, or other obstruction not required for or produced in, the process carried on in the room.

(2) In all such rooms other than grid casting shops the floor shall be-

(a) Cleaned daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

(3) In grid casting shops the floor shall be cleaned daily.

(4) Without prejudice to the requirements sub-paragraphs (1),(2) and (3), where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be-

(a) kept constantly moist while work is being done;

(b) provided with suitable and adequate arrangements for drainage;

(c) Thoroughly washed daily by means of a hose pipe.

9. Work-benches.-

The work benches at which any lead process is carried on shall-

(a) have a smooth surface and be maintained in sound condition;

(b) be kept free from all materials or plant not required for, or; produced in, the process carried on thereat;

And, all such work-benches other than those in grid casting shops, shall –

(c) be cleaned daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat;

And, all such work-benches in grid casting shops, shall –

(d) be cleaned daily;

And every work-bench used for pasting shall -

(e) be covered throughout with sheet lead or other impervious material;

(f) be provided with raised edges;

(g) be kept constantly moist while pasting is being carried on;

And every work-bench used for trimming, brushing, filing or any other abrading or cutting of pasted plate shall-

(h) be fitted with a top having opening or grill which shall allow any clippings, filings, or dust produced to fall into a collecting trough containing water.

10. Exhaust draught.-

The following processes shall not be carried on without the use of an efficient exhaust draught:-

(a) melting of lead or materials containing lead;

(b) manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape if dust into the work-room;

(c) pasting;

(d) trimming, brushing, filing or any other abrading or cutting of pasted plates giving rise to dust;

(e) lead burning , other than-

(i) "tacking" in the formation room;

(ii) Chemical burning for the making of lead linings for cell cases necessarily carried on in such a manner that the application of efficient exhaust is impracticable.

Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as may be as its point of origin, so as to prevent in from entering the air of any room in which persons work.

11. Fumes and gases from melting pots.-

The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

12. Container for dross.-

A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the work-room, except when dross is being deposited therein.

13. Container for lead waste.-

A suitable receptacle shall be provided in every work-room in which old plated and waste material which may give rise to dust shall be deposited.

14. Racks and shelves in drying room.-

The racks or shelves provided in any drying room shall not be more than 2.4 metres from the floor not more than 61.00 centimeters in width:

Provided that as regards racks or shelves set of drawn from both sides the total width shall not exceed 1.2 meters.

Such racks or shelves shall be cleaned only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

15. Medical examination.-

(a) Every person employed in a lead process shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter shall be examined by

the Certifying Surgeon once in every calendar month, or at such other intervals as may be specified in writing by the Chief Inspector, on a day of which due notice shall be given to all concerned.

(b) "First employment" means first employment in a lead process in the factory or workshop and also re-employment therein in a lead process following any cessation of employment in such process for a period exceeding three calendar months.

(c) Health register in **Form 42** containing the names of all person employed in a lead process shall be kept.

(d) No person after suspension shall be employed in a lead process without written sanction from the Certifying Surgeon entered in or attached to the Health Register.

16. Protective clothing.-

Protective clothing shall be provided and maintained in good repair for all persons employed in-

(a) manipulation of raw oxide of lead;

(b) pasting;

(c) the formation room;

And such clothing shall be worn by the persons concerned. The protective and such clothing shall consist of a water-proof apron and water-proof footwear; and also, as regards persons employed in the manipulation of raw oxide of lead or in pasting head coverings. The head coverings shall be washed daily.

17. Mess room.-

There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess-room, which shall be furnished with (a) sufficient tables and benches, and (b) adequate means for warming food.

The mess-room shall be placed under the charge of a responsible person, and shall be kept clean.

18. Cloak-room.-

There shall be provided and maintained for the use of all persons employed in a lead-process-

(a) A cloak-room for clothing put off during working hours with adequate arrangements for drying the clothing if wet. Such accommodation shall be separate from any mess-room;

(b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 16.

19. Washing facilities.-

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process-

(a) A wash-place under cover, with either-

(i) a trough with a smooth impervious surface fitted with a waste pipe, without plug, and of sufficient length to allow of at least 61.00 centimeters for every five such persons employed at anyone time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61.00 centimeters; or

(ii) at least one wash basin for every five such persons employed at any time, fitted with a waste pipe and plug and having a constant supply of water laid on;

(iii) a sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case pasters and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker ; and

(iv) A sufficient supply of soap or other suitable cleaning material and of nail brushes.

(b) There shall in addition be provided means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector.

20. Time to be allowed for washing.-

Before each meal and before the end of the day's work, at least 10 minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there is one basin or 61.00 centimeters or trough for each such person this rule shall not apply.

21. Facilities of bathing.-

Sufficient bath accommodation to the satisfaction of the Chief Inspector-cum-Facilitator shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting and a sufficient supply of soap and clean towels.

22. foods, drinks, etc., prohibited in work-rooms.-

No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any work-room in which any lead process is carried on.

23. Storage of lead oxides.-

All bags containing or having contained oxides of lead shall be kept in a closed room used only for this purpose.

24. Re-use of paper or cloth restricted.-

(a) Paper once used for backing or drying pasted shall not be used again in the factory.

(b) Cloth once used for backing or drying pasted plated shall not be stored or handled unless it is moist so as not to give rise to dust,

Schedule VI. Glass manufacture

1. Exemption.-

If the Chief Inspector-cum-Facilitator is satisfied in suspect of any factory or any class of process that, owing to the special methods of work or the special conditions in a factory or otherwise, any of the requirements of this Schedule can be suspended or relaxed without danger to the persons employed therein or that the application of this Schedule or any part thereof is, for any reason, impracticable, he may by certificate in writing authorize such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

2. Definitions.-

For the purpose of this Schedule.-

(a) "Efficient exhaust draught" means localized ventilation effected by mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates.

(b) "lead Compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent of the dry weight of the portion taken for analysis.

The method of treatment shall be as follows:-

A weight quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour at the common temperate with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of an aqueous solution of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

(c) "Suspension", means suspension from employment in any process specified in paragraph 3 by written certificate in the Health Register **Form 42** signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process.

3. Exhaust draught.-

The following processes shall not be carried on except under an efficient exhaust draught or under such other conditions as any be approved by the Chief Inspector.

(a) The mixing of raw materials to form a "batch";

(b) The dry-grinding, glazing and polishing of glass or any article of glass;

(c) All processes in which hydrofluoric acid fumes or ammoniacal vapors are given off;

(d) All processes in the making of furnace moulds or "pots including the grinding or crushing of used "pots";

(e) All processes involving the use of a dry lead compound.

4. Prohibition relating to women and young persons.-

No lactating mother and pregnant women or young person shall be employed or permitted to work in any of the operations specified in paragraph 3 or at any place where such operations are carried on.

5. Floor and work-benches.-

The floor and work-benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and shall comply with the following requirements:- The floors shall be-

(a) Of cement or similar materials so as to be smooth and impervious to water:

(b) maintained in sound condition; and

(c) Cleaned daily after being thoroughly sprayed with a water at a time when no other work is being carried on in the room.

The work-benches shall-

(a) have a smooth surface and be maintained in sound condition; and

(b) Be cleaned daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.

6. Use of hydrofluoric acid.-

The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid:

(a) There shall be inlets and outlets of adequate sizes so as to secure and maintain efficient ventilation in all parts of the rooms;

(b) The floor shall be covered with gutta-percha and be tight and shall gently down to a covered drain;

(c) The work places shall be so enclosed in projecting hoods that opening required for bringing in the objects to be treated shall be as small as practicable; and

(d) The efficient exhaust draught shall be so contrived that the gases are exhausted downwards.

7. Storage and transport of hydrofluoric Acid.-

Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or, gutta-percha.

8. Food, drinks, etc. prohibited in work-rooms.-

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any room or work-place wherein any process specified in paragraph 3 is carried on.

9. Protective clothing.-

The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 3 suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear, etc., shall be worn by the persons concerned.

10. 10. Washing facilities.-

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in the processes specified in paragraph 3-

(a) A wash place with cither-

(i) a trough with a smooth impervious surface fitted with a waste pipe, without plug and sufficient length to allow of at least 61.00 centimeters for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61.00 centimeters; or

(ii) at least one wash basin for every such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available;
and a sufficient supply of clean towels made of suitable material renewed daily with a sufficient supply of soap or other suitable cleaning material and of nail brushes;
and

(b) A sufficient number of stand pipes with taps- the number and location of such stand pipes shall be to the satisfaction of the Chief Inspector.

11. Medical Examination.-

(a) Every person employed in any process specified in paragraph 3 shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter shall be examined by the Certifying Surgeon once in every calendar month or at such other intervals as may be specified in writing by the Chief Inspector-cum-Facilitator on a day of which due notice shall be given to all concerned.

(b) A Health Register in **Form 42** containing names of all persons employed in any process specified in paragraph 3 shall be kept.

(c) No person after suspension shall be employed in any process specified in paragraph 3 without written sanction from the Certifying Surgeon centered in or attached to the Health Register.

Schedule VII. Grinding or glazing of metals and processes incidental thereto

1. Definitions.-

For the purposes of this Schedule-

(a) "Grindstone" means a grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of natural or manufactured sandstone are fitted.

(b) "Abrasive wheel" means a wheel manufactured of bonded emery or similar abrasive.

(c) "Grinding" means the abrasion, by aid or mechanical power, of metal, by means of grindstone or abrasive wheel.

(d) "Glazing" means the abrading, polishing or finishing by aid of mechanical powers, by means of any wheel, buff, mop or similar appliance to which any abrading or polishing substance is attached or applied.

(e) "Racing" means the turning up, cutting or dressing of a revolving grindstone before it is brought into use for the first time.

(f) "Hacking" means the chipping of the surface of a grindstone by a hack or similar tool.

(g) "Roding" means the dressing of the surface of a revolving grindstone by the application of a rod, bar or strip of metal to such surface.

2. Exception:-

(1) Nothing in the Schedule shall apply to any factory in which only repairs are carried on except any part thereof in which one or more persons are wholly or mainly employed in the grinding or glazing of metals.

(2) Nothing in this Schedule except paragraph 4 shall apply to any grinding or glazing of metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

(3) The Chief Inspector-cum-Facilitator may by certificate in writing, subject to such conditions as he may specify therein, relax or suspend any of the provisions of this Schedule in respect of any factory if owing to the special methods of work or otherwise such relaxation or suspension is practicable without danger to health of safety or the persons employed.

3. Equipment for removal of dust.-

No racing, dry grinding or glazing shall be performed without-

(a) a hood or other appliance so constructed, arranged, placed and maintained as substantially to intercept the dust thrown off, and

(b) a duct of adequate size, air tight and so arranged as to be capable of carrying away the dust, which dust shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable with a connection at the end remote from the fan to enable the Inspector-cum-Facilitator to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct, and

(c) a fan or other efficient means of producing a 'draught sufficient to extract the dust:

Provided that the Chief Inspector-cum-Facilitator may accept any other appliance that is in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

4. Restriction on employment on grinding operation.-

Not more than one person shall at a time perform the actual process of grinding or glazing upon a grindstone, abrasive wheel or glazing appliance:

Provided that this paragraph shall not prohibit the employment of persons to assist in the manipulation of heavy or bulky articles at any such grindstone, abrasive wheel or glazing appliance.

5. Glazing.-

Glazing or other processes, except processes incidental to wet grinding upon a grindstone shall not be carried on in any room in which wet grindstone is done.

6. Hacking and Roding.-

Hacking or Roding shall not be done unless during the process either (a) and adequate supply of water is laid on at the upper surface of the grindstone or (b) adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 3.

7. Examination of dust equipment. -

All equipment for the extraction or suppression of dust shall at least once in every twelve months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectified as soon as practicable.

A test report in **Form 46** shall be available for inspection by an Inspector-cum-Facilitator .

Schedule VII. Manufacture and treatment of lead and certain compounds of lead

1. Exemptions.-

Where the Chief Inspector-cum-Facilitator is satisfied that all or any of the provisions of this Schedule are not necessary, for the protection of the persons employed, he may by certificate in writing exempt any factory from all or any of such provisions, subject to such conditions as he may specify therein.

2. Definitions.-

For the purposes of this Schedule-

(a) "Lead Compound" means any compound of Lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as lead monoxide five per cent of the dry weight of the portion taken of analysis. In the case of paints and similar products and other mixtures containing oil or fat the :dry weight" means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media. The method of treatment shall be as follows:-

Weighted quantity of the material which has been dried at 1030c, and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighted as lead sulphate.

(b) "Efficient Exhaust Draught" means localized ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generate at the point where such gas, vapour, fumes or dust originate.

3. Application.-

This Schedule shall apply to all factories or parts of factories in which any of the following operations are carried on:-

(a) Work at a furnace where the reduction or treatment of zinc or lead ores is carried on.

(b) The manipulation, treatment or reduction of ashes containing lead, the desilversing of lead or the melting of scrap lead or zinc.

(c) The manufacture of solder or alloys containing more than ten per cent of lead.

(d) The manufacture of any oxide, carbonate, sulphate, chromate, acetate, citrate or silicate of lead.

(e) Handling or mixing of lead tetra-ethyl.

(f) Any other operation involving the use of a lead compound.

(g) The cleaning of work rooms where any of the operations aforesaid are carried on.

4. Prohibition relating to women and young persons.-

No lactating mother and pregnant women or young person shall be employed or permitted to work in any of the operations specified in paragraph 3.

5. Requirement to be observed.-

No person shall be employed or permitted to work in any process involving the use of lead compounds if the process is such that dust or fume from a lead compound is produced therein, or the persons employed therein are liable to be splashed with any lead compound in the course of their employment unless the provisions of paragraph 5 to 14 are complied with.

6. Exhaust draught.-

Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means of an efficient exhaust draught so contrived as operate on the dust, fume, gas or vapors as closely as possible to the point of origin.

7. Certificate of fitness.-

A person medically examined under paragraph 8 and found fit for employment shall be granted by a Medical Officer (Certifying Surgeon) a certificate of fitness in **Form 24** and such certificates shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector-cum-Facilitator and the person granted such a certificate shall carry with him, while at work a token giving reference to such certificate.

8. Medical Examination.-

(1) The person so employed shall be medically examined by a Medical Officer (Certifying Surgeon)within 14 days of his first employment in such process and thereafter shall be examined by the Medical Officer (Certifying Surgeon)at intervals of not more than three months, and a record of such examinations shall be entered by the Medical Officer (Certifying Surgeon)in the special certificate of fitness granted under paragraph 7.

(2) If at any time the Medical Officer (Certifying Surgeon)is of opinion that any person is no longer fit at any time the grounds that continuance therein would involve special dangers to health, he shall cancel the special certificate of fitness of that person.

(3) No person whose special certificate of fitness has been cancelled shall be employed unless the Medical Officer (Certifying Surgeon), after re-examination, again certifies him to be fit for employment.

9. Food drinks, etc. prohibited in work rooms.-

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work-room in which the process is carried on and no person shall remain in any such room during intervals for meals or rest.

10. Protective clothing.-

Suitable protective overalls and hand coverings shall be provided, maintained and kept clean by the factory occupier and such overalls coverings shall be worm by the person employed.

11. Cleanliness of work rooms, tools, etc.-

The rooms in which the persons are employed and all tools and apparatus used by them shall be kept in a clean state.

12. Washing facilities.-

The occupier shall provide and maintain for the use of all persons employed suitable washing facilities consisting of-

a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 61 centimeters employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters, or

at least one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and having a constant supply of clean water;

The facilities provided shall be placed under the charge of responsible person and shall be kept clean.

13. Mess-room or Canteen.-

The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking their meals. The arrangements shall consist of the use of a room separate from any work-room which shall be furnished with sufficient tables and benches, and unless a canteen serving hot meals is provided, adequate means of warming food, The room shall be adequately ventilated by the circulation of fresh air, shall be placed under the charge of a responsible person and shall be kept clean.

14. Cloak room.-

The occupier shall provide and maintain for the use of person employed, suitable accommodation for clothing not worn during hours and for the drying of wet clothing.

Schedule IX. Generation of gas from dangerous petroleum as defined in clause (b) of Sec. 2 of the Petroleum Act, 1934

1. Prohibition relating to women and young persons.-

No lactating mother and pregnant women or young person shall be employed or permitted to work in or shall be allowed to enter the building in which the generation of gas from dangerous petroleum as defined in clause (b) of section 2 of the Petroleum Act, 1934, is carried on.

2. Flame traps.-

The plant for generation of gas from dangerous petroleum as defined in clause (b) of section 2 of the Petroleum Act,1934, and fittings shall be fitted with at least two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps, shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.

3. Generation buildings or room.-

All plants for generation of gas from dangerous petroleum as defined in clause (b) of section 2 of the Petroleum Act, 1934, erected after the coming into force of the provisions specified in this Schedule, shall be erected outside the factory building proper in a separate well ventilated building (hereinafter referred to as the "generating building"). In case of such plant erected before the coming into force of the provisions specified in this Schedule there shall be direct communication between the room where such plants are erected (hereinafter referred to as "the generating room") and the remainder of the factory building. So far as the practicable, all such generating rooms shall be constructed of fire resisting materials:

Provided that where the State Government is satisfied in respect of any factory that the plant for generation of gas from dangerous petroleum as defined in clause (b) of section 2 of the Petroleum Act, 1934, is on account of the special precautions adopted or contrivances used for such plant, not likely to expose any persons employed in such factory to any serious risk of bodily injury, the State Government, may be notification in the Official Gazette exempt such factory wholly or partially from the provisions of this clause for such period and on such conditions as it may specify.

4. Fire extinguishers.-

An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum as defined in clause (b) of section 2 of Petroleum Act, 1934.

5. Plant to be approved by Chief Inspector.-

Petrol gas shall not be manufactured except in a plant for generating petrol gas the design and construction of which has been approved by the Chief Inspector.

6. Escape of Petrol.-

Effective steps shall be taken to prevent petrol from escaping into any drain or sewer.

7. Prohibition relating to smoking etc.-

No person shall smoke or carry matches, fire or naked light to other means of producing a naked light or spark in the generating room or in the vicinity thereof and a warning notice in the language understood by the carrying of matches, fire or naked light or other means of producing a naked light or spark in such room or building.

8. Access to petrol or container.-

No unauthorized person shall have access to any petrol or to a vessel containing or having actually contained petrol.

9. Electric fittings.-

All electric fittings shall be of flame proof construction and all electric conductors shall either be enclosed in metal conduits or to be lead sheathed.

10. Construction of doors. -

All doors in the generating room or building shall be constructed to open outwards or to slide and no door shall be locked or obstructed or fastened in such a manner that it cannot be easily and immediately opened from the inside while gas is being generating and any person is working in the generating room or building.

11. Repair of containers. -

No vessel that has contained petrol shall be repaired in a generating room or building and no repairs to any such vessel shall be undertaken unless live steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to require that it has been rendered free from petrol or inflammable vapour.

Schedule X. Cleaning, smoothing, roughening or removing of any part of the surface of articles, by a jet of sand, metal shot, or grit or other abrasive propelled by a blast of compressed air or steam

1. Definitions. -

(a) "Blasting" means cleaning, smoothing, roughening, or removing of any part of the surface of any article by the use as an abrasive of a jet of sand, metal shot, or grit or other material, propelled by a blast of compressed air or steam;

(b) "Blasting enclosure" means a chamber, barrel, cabinet or any other enclosure designed for the performance of blasting therein;

(c) "Blasting chamber" means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise;

(d) "Cleaning of castings" where done as an incidental or supplemental process in connection with the making of metal castings, means the freeing of the casting from adherent sand or other substance and includes the removal of cores and the general smoothing of a casting but does not include the free treatment.

2. Prohibition of Sand Blasting. –

Sand or any other substance containing free silica not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting:

Provided further that, no lactating mother and pregnant women or young person shall be employed or permitted to work, at any operation of sand blasting.

3. Precautions in connection with Blasting Operations. –

(1) **Blasting to be done in blasting enclosure.-** Blasting shall not be done except in a blasting enclosure and no work other than blasting and any work immediately incidental thereto and clearing and repairing of the enclosure including the plans and appliances situated therein, shall be performed in a blasting enclosure. Every door, aperture and joint of blasting enclosure, shall be kept closed and air tight while blasting is being done therein.

(2) **Maintenance of blasting enclosure.** - Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosures, and from apparatus connected therewith into the air of any room.

(3) **Provision of separating apparatus.** - There shall be provided and maintained for and in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable abrasive which has been used for blasting and which is to be used again as an abrasive from dust or particles of other materials arising from blasting; and no such abrasive shall be introduced into any blasting apparatus and used for blasting until, it has been so separated :

(4) **Provision of ventilating plant.** - There shall be provided and maintained in connection with every blasting enclosure efficient ventilation plant to extract, by exhaust draught affected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in a such manner that it shall not escape into the air of any room, and every other filtering or settling devices situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, shall be completely separated from the general air of that room in an enclosure ventilated to the open air.

(5) **Operation of ventilating plant.** - The ventilating plant provided for the purpose of sub-paragraph (4) shall be kept in continuous operation whenever the blasting enclosure is in use whether or not blasting is actually taking place therein and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.

4. Inspection and examination. -

(1) Every blasting enclosure shall be specially inspected by responsible person at least once in a every week in which it is used for blasting. Every blasting enclosure; the apparatus connected therewith and the ventilating plant, shall be thoroughly examined and in the case of ventilating plant tested by a competent person at least once in twelve months.

(2) Particulars of the result of every such inspection, examination and test shall forthwith be entered in a **Form 44** and available at factory premises for inspection by Inspector-cum-Facilitator of Factories. Any defect found on any such inspection, examination or test shall be immediately reported by the person carrying out the inspection, examination or test to the occupier, manager or other appropriate person and without prejudice to the foregoing provisions of this Schedule shall be removed without available delay.

5. Provision of protective helmets gauntlets and overalls. -

(1) There shall be provided an maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector-cum-Facilitator and every such person shall wear the helmet provided for this use whilst he is in the chamber and shall not remove it until he is outside the chamber.

(2) Each protective helmet shall carry a distinguishing mark indicating the person by whom it is intended to be used and no person shall be allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another person and has not since been thoroughly disinfected.

(3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than six cubic feet per minute.

(4) Suitable gauntlets and overalls shall be provided for the use of all persons while performing blasting or assisting or blasting and every such person shall while so engaged wear the gauntlet and overall provided.

6. Precautions in connection with cleaning and other work. -

(1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting apparatus or blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk of inhaling dust which has arisen from blasting, all practicable measures shall be taken to prevent such inhalation.

(2) In connection with any cleaning operation referred to in paragraph 5 and with the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such a manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used whenever practicable for such cleaning operations.

7. Storage accommodation for protective wear.

Adequate and suitable storage accommodation for the helmet, gauntlets and overall required to be provided by paragraph 5 shall be provided outside and conveniently near to every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlets and overalls when not is actual use shall be kept in this accommodation.

8. Maintenance and cleaning of protective wear. -

All helmets, gauntlets, overalls and other protective devices or clothing provided and worn for the purposes of this Schedule, shall be kept in good condition and so far as is reasonably practicable shall be cleaned on every week-day in which they are used. Where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation vacuum cleaners shall wherever practicable, be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

9. Maintenance of vacuum cleaning plant.

Vacuum cleaning plant used for the purpose of this Schedule shall be properly maintained.

10. Restrictions in employment of young persons. -

(1) No person under 18 years of age shall be employed in blasting or assisting at blasting or in any blasting or in any blasting chamber or in the cleaning of any blasting apparatus enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant.

(2) No person under 18 years of age shall be employed to work regularly within twenty feet of any blasting enclosure unless the enclosure is in a room and he is outside that room where he is effectively separated from any dust coming from the enclosure.

11. Power to exempt or relax. -

(1) If the Chief Inspector-cum-Facilitator is satisfied that in any factory or any class of factory, the use of sand or other substance containing free silica as an abrasive in blasting is necessary for a particular manufacture or process other than the process incidental or supplemental to making of metal casting and that the manufacture or process cannot be carried on without the use of such abrasive or that owing to the special conditions or special method of work or otherwise any requirement of this Schedule can be suspended either temporarily or permanently or can be relaxed without endangering the health of the persons employed or that application of any of such requirements is for any reason impracticable or inappropriate, he may with the previous sanction of the State Government, by an order in writing, exempt the said factory or class of factory from such provisions of this Schedule, to such an extent and subject to such conditions and for such period as may be specified in the said order.

Where an exemption has been granted under sub-paragraph (1) a copy of the order shall be displayed at a notice board at a prominent place at the main entrance or entrances to the factory.

Schedule XI. Liming and tanning of raw hides and skins processes incidental thereto

1. Cautionary notices. -

(1) Cautionary notices as to anthrax, in the form specified by the Chief Inspector-cum-Facilitator shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.

(2) A copy of warning notice as to anthrax in the form specified by the Chief Inspector-cum-Facilitator shall be given to each persons employed when he is engaged and subsequently it still employed on the first day of each calendar year.

(3) Cautionary notices as to the effects of chrome on the skin shall be affixed on prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.

(4) Notices shall be affixed in prominent places in the factory stating the position of the "First Aid" box or cupboard and the name of theperson in charge of such box or cupboard.

(5) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notices specified in paragraphs 1, 2 and 4 and if chrome solutions are used in the factory, the contents of the notice specified in paragraph 3.

2. Protective clothing. -

The occupier shall provide and maintain in good condition the following articles of protective clothing -

(a) water-proof foot wear, leg coverings, aprons and gloves for persons employed in processes involving contact with chrome solutions, including the preparation of such solutions;

(b) gloves and boots for persons employed in lime yard; and

(c) protective foot wear, aprons and gloves for persons employed in processes involving the handling of hides or skins, other than in processes specified in clauses (a) and (b) :

Provided that -

(i) the gloves, aprons, leg coverings or boots may be of rubber or leather, but the gloves and boots to be provided under clauses (a) and (b) shall be only of rubber;

(ii) The gloves may or may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, sodium sulphide or other caustic liquor."

3. Washing facilities, mess-room and cloak-room. -

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed -

(a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 61.00 centimeters for every ten persons employed at any one time and having a constant supply of water from taps or jets above the trough, at intervals of not more than 61.00 centimeters; or

(b) at least one wash basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water, together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing materials, and clean towels;

(c) suitable mess-room, adequate for the number remaining on the premises during the meal intervals which shall be furnished with (1) sufficient tables and benches and (2) adequate means for warming food and for boiling water.

(d) The mesh-room shall (1) be separate from any room or shed in which hides or skins are stored, treated or manipulated, (2) be separate from the cloak-room and (3) be placed under the charge of a responsible persons;

(e) the occupier shall provide and maintain, for the use of all persons employed, suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and shall also make adequate arrangements for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept clean at all times and placed under the charge of a responsible persons".

4. Foods, drinks etc. prohibited in work-rooms. -

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work-room or shed in which hides or skins are stored, treated or manipulated.

5. First aid arrangements. -

The occupier shall -arrange for an inspection of the hands of all persons coming into contact with chrome solutions to be made twice a week by a responsible person;

Provide and maintain a sufficient supply of suitable ointment and impermeable waterproof plaster in a box readily accessible to the worker and used solely for the purpose of keeping the ointment and plaster.

Schedule XII. Manufacture of chromic acid or manufacture of recovery of the bichromate of sodium or potassium or ammonium

1. Definitions. -

For the purposes of this Schedule -

(a) "Chrome process" means the manufacture of chromic acid or bichromate of sodium or potassium or ammonium or the manipulation, movement or other treatment of these substances in connection with their manufacture.

(b) "Efficient exhaust draught" means localized ventilation effected by mechanical or other means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated to the point where such gas, vapour, fumes or dust originate.

(c) "Suspension" means suspension from employment in any of the chrome process specified by written certificate in the Health Register **(Form 42)** signed by the Medical Officer (Certifying Surgeon), who shall have power of suspension as regards all persons employed in any such process.

2. Prohibition relating to women and young persons. -

No lactating mother and pregnant women or young person shall be employed or permitted to work on any chrome process.

3. Efficient exhaust draught. -

The following chrome processes shall not be carried on without the use of an efficient exhaust-draught, namely :-

(a) grinding;

(b) sieving;

(c) batch mixing;

(d) concentration.

3A. Separation of certain processes. -

The following chrome processes namely :-

(a) grinding of raw materials, and

(b) sieving of raw materials,

Shall be carried on in such manner and under such conditions as to secure effectual separation from any processes.

4. Washing facilities. -

(1) Where acidification, sulphate settling or washing, concentration, crystallisation, centrifugation or packing is carried out, there shall be provided close to each worker's station -

(a) wash places installed for washing hands and feet frequently in running water, and

(b) a container holding at least 20 ounces of 10 per cent solution of sodium bisulphite or any other suitable reducing agent.

(2) There shall also be provided and maintained in a cleanly stated and good repair washing accommodation under cover with a sufficient supply of soap and towels on the scale indicated below -

At least one tap or stand pipe for every 10 employees and the tap or pipe shall be spaced not less than 1-2 meters apart.

5. Time to be allowed for washing. -

Before each meal and before the end of the day's work at least ten minutes, in addition to the regular meal time shall be allowed for washing to each person employed in a chrome process.

6. Flooring. -

The floor of every work room shall be -

(a) of cement or similar other material so as to be smooth and impervious to water and provided with suitable gradient and drainage;

(b) Maintained in sound condition and cleaned daily.

7. Medical facilities. -

(1) The occupier of the factory shall appoint a factory medical officer who shall examine and treat all workers for chrome ulcerations on the premises at least thrice a week. Records of such examination and treatment shall be maintained in a form approved by the Chief Inspector-cum-Facilitator and shall be available to the Inspectors for inspection. Medicaments, dressing and other equipment required for such examination and treatment shall be provided by occupier.

(2) The occupier shall in addition appoint a person trained in First Aid who shall inspect daily the hands and feet of all persons employed and shall keep a record of such inspection in a register maintained for the purpose in a form approved by the Chief Inspector-cum-Facilitator.

(3) The occupier shall also provide and maintain a sufficient supply of suitable ointment and impermeable water-proof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping the ointment and plaster.

8. Protective equipment. -

(1) The occupier shall provide and maintain for the use of all persons employed –

(a) in grinding, sieving or mixing raw materials, sufficient and suitable respirators (issued separately for each individual) the filtering materials of which shall be renewed daily;

(b) in roasting process, suitable footwear;

(c) in acidification, settling concentration, crystallization, centrifugation or packing suitable aprons and protective coverings for hands and feet.

2. Arrangements shall be made by the occupier for the examination and cleaning of all the protective equipment at the close of each day's work and for the repairs or renewal thereof when necessary.

9. Use of protective equipment. -

Every person employed in a chrome process shall make use of the protective equipment provided under rule 8.

10. Cloak-room. -

There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in any chrome process -

(a) a cloak-room for street clothing put off during working hours including adequate, arrangements for drying such clothing when wet, such accommodation shall be separate from any mess room;

(b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 8.

11. Mess Room. -

(1) There shall be provided and maintained for the use of all persons remaining within the premises during the meal intervals a suitable mess-room providing accommodation of at least 0.9 sq.metres per head and furnished with -

(i) A sufficient number of tables and chairs or benches;

(ii) Arrangements for washing utensils;

(iii) Adequate means for warming food.

(2) The mess-room shall be placed under the charge of a responsible person and shall be kept clean.

12. Food, drinks, etc., prohibited in work-rooms. -

No food, drink, "pan", "supari", or tobacco shall be brought or consumed by any worker or in any work-room in which chrome process is carried on and no person shall remain in any such room during intervals for meals or rest.

13. Medical examination. -

(1) Every person employed in a chrome process shall be examined by the Medical Officer (Certifying Surgeon) once in every calendar month, or at such other intervals as may be specified in writing by the Chief Inspector-cum-Facilitator on a day of which due notice shall be given to all concerned and such examination shall take place on the factory premises.

(2) Every person employed shall present himself at the appointed time for examination by the Medical Officer (Certifying Surgeon) as provided in clause (1).

(3) A Health Register in **Form 42** containing the names of all persons employed in a chrome process shall be kept.

(4) No person after suspension shall be employed in chrome process without a written sanction from the Medical Officer (Certifying Surgeon) entered in the Health Register.

14. Fencing of Vessels. -

Every fixed vessel, whether pot, pan, vat or other structure, containing any dangerous material, and not so covered as to eliminate all reasonable risk of accidental immersion of any portion of the body of a person employed shall be fenced as follows :-

(a) Each such vessel shall, unless its edge is at least 91.4 centimeters the adjoining ground or platform be securely fenced to a height of at least 91.4 centimeters above such adjoining ground or platform;

(b) No plank or gang-way shall be placed across or inside any such vessel unless such plank or gang-way is -

(i) at least 45.7 centimeters in width, or

(ii) securely fenced on both sides, either by upper and lower rails to a height of 91 centimeters or by other equally efficient means;

(c) If any two such vessels are near each other and the space between them clear of any surrounding brick-work or other work, is either -

(i) less than 45.7 centimeters in width, or

(ii) is 45.7 or more centimeters in width, but is not securely fenced on both sides to a height of at least 91.4 centimeters secure barriers shall be placed so as to prevent any passage between them.

15. Cautionary notice. -

A cautionary notice in the form specified by the Chief Inspector-cum-Facilitator and printed in the language of the majority of the workers, employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

16. Exemption. -

If in respect of any factory the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or the infrequency of the process, or for any other reason, all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such factory, he may by certificate in writing, exempt such factory from all or any of the provisions indicated in such certificate on such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector-cum-Facilitator without assigning reasons.

Schedule XIII. Manufacture or Manipulation of carcinogenic dye intermediates

1. Application. -

The Schedule shall apply in respect of all factories or any part thereof where processes in which the substances, mentioned in paragraph 3 and 4 are formed, manufactured, handled or used and the processes incidental in this paragraph shall be referred to hereinafter as "the processes" and such a reference shall mean any or all the processes described in this paragraph.

2. Definition. -

For the purpose of this Schedule the following definitions shall apply, unless the context otherwise requires -

(a) "controlled substances" means chemical substances mentioned in paragraph 4 of this Schedule;

(b) "efficient exhaust draught" means localized ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on. No draught, shall be deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates; and

(c) "prohibited substances" means chemical substances mentioned in paragraph 3 of this Schedule.

(d) "first Employment" means first employment in the said processes and also re-employment in such processes following any cessation of employment for a continuous period exceeding three calendar months.

3. Prohibited substances. -

For the purpose of this Schedule, the following chemical substances shall be classified as "prohibited substances" except when these substances are present or are formed as a by-product of a chemical reaction in a total concentration not exceeding one present :

beta-naphthylamine and its salts;

benzidine and its salts;

4-amino diphenyl and its salts;

4-nitro diphenyl and its salts; and

any substance containing any of these compounds.

4. Controlled substances. -

For the purpose of this Schedule, the following chemical substances shall be classified as "controlled substances" :

alpha-naphthalamine or alpha-naphthylamine containing not more than one present of beta-naphthylamine either as a by-product of chemical reaction or otherwise, and its salts;

ortho-tolidine and its salts;

dianisidine and its salts;

dichioro benzidine and its salts;

auramine; and

magenta.

5. Prohibition of employment.-

No person shall be employed in the said processes in any factory in which any prohibited substance is formed, manufactured, processed, handled or used except as exempted by the Chief Inspector-cum-Facilitator as stipulated in paragraph 23.

6. Requirements for processing or handling controlled substances. -

Wherever any of the controlled substances referred to in paragraph 4 are formed, manufactured, processed, handled or used, all practical steps shall be taken to prevent inhalation, ingestion or absorption of the said controlled substance by the working while engaged in processing that substance, and its storage or transport within the plant, or in cleaning or maintenance of the concerned equipment, plant, machinery and storage areas.

As far as possible all operations shall be carried out in a totally enclosed system. Wherever such enclosure is not possible, efficient exhaust draught shall be applied at the point where the controlled rolled substances are likely to escape into atmosphere during the process.

The controlled substances shall be received in the factory in tightly closed containers and shall be kept so except when these substances are in process or in use. The controlled substances shall leave the factory only in tightly closed containers of appropriate type. All the containers shall be plainly labeled to indicate the contents.

7. Personal Protective Equipment. -

The following items of personal protective equipment shall be provided and issued to every worker employed in the said processes :

long trousers and shirts or overalls with full sleeves and head coverings. The shirt or overall shall cover the neck completely; and

rubber gum-boots.

The following items of personal protective equipment shall be provided in sufficient numbers for use by workers employed in the said processes when there is danger of injury during the performance of normal duties or in event of emergency :

rubber hand-gloves;

rubber aprons; and

airline respirators or other suitable respiratory protective equipment.

It shall be the responsibility of the manager to maintain all items of personal protective equipment in a clean and hygienic condition and in good repair.

8. Prohibition relating to employment of women and young persons. -

No lactating mother and pregnant women or young person shall be employed or permitted to work in any room in which the said processes are carried on.

9. Floor of work-room. -

The floor of every workroom in which the said processes are carried on shall be (a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor, (b) maintained in a state of good repair, (c) with a suitable slope for easy draining and provided with gutters and (d) thoroughly washed daily with the drain water being led into a sewer through a closed channel.

10. Disposed of empty containers. -

Empty containers used for holding controlled substances shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.

11. Manual handling. -

Controlled substances shall not be allowed to be mixed, filled, emptied or handled except by means of scoop with a handle. Such scoop shall be thoroughly cleaned daily.

12. Instructions regarding risk.-

Every worker on his first employment in the said processes shall be fully instructed on the properties of the toxic chemicals to which he is likely to be exposed to, of the dangers involved and the precautions to be taken. Workers shall also be instructed on the measures to be taken to deal with an emergency.

13. Cautionary Placards. -

Cautionary placards in the specified in appendix attached to this Schedule and printed in the language of the majority of the workers employed in the said process shall be affixed in prominent places frequented by them in the factory, where the placards can be easily and conveniently read. Arrangements shall be made by the manager to instruct periodically all such workers regarding the precautions contained in the cautionary placards.

14. Obligations of the workers.-

It shall be the duty of the persons employed in the processes to submit themselves for the medical examination including exfoliative cytology of urine by the Certifying Surgeon or the factory medical officer as provided for, under these rules.

15. Washing and bathing facilities. -

(1) The following washing and bathing facilities shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the said processes :

(a) a wash place under cover having constant supply of water and provided with clean towels, soap and all nail brushes and with at least one stand pipe for every five such workers;

(b) 50 per cent of the stand pipes provided under clause (a) shall be located in bathrooms where both hot and cold water shall be made available during the working hours of the factory and for one hour thereafter;

(c) The washing and bathing facilities shall be in close proximity of the area housing the said processes;

(d) Clean towels shall be provided individually to each worker; and

(e) In addition to the taps mentioned under clause (a), one stand pipe, in which water is made available, shall be provided on each floor.

(2) Arrangement shall be made to wash factory uniforms and other work clothes everyday.

16. Food, drinks etc. prohibited in workroom. -

No worker shall consume food, drink, pan, supari or tobacco or shall smoke in any workroom in which the said processes are carried on and no worker shall remain in any such room during intervals for meals of rest.

17. Cloak room.-

There shall be provided and maintained in a clean state and in good repair for the use of the workers employed in the said processes (a) a clock room with lockers having two compartments - one for stress clothes and the other for work clothes, and (b) a place separate from the locker room and the mess room, for the storage of protective equipment provided under paragraph 7. The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

18. Mess room. -

There shall be provided and maintained for the use of workers employed in the said processes who remain on the premises during the meal intervals, a mess room which shall be furnished with table and benches and provided with suitable means for warming food.

19. Time allowed for washing. -

Before the end of each shift 30 minutes shall be allowed for bathing for each worker who is employed in the processes, further at least 10 minutes shall be allowed for washing before each meal in addition to the regular time allowed for meals.

20. Restriction on age of persons employed.-

No worker under the age of 40 years shall be engaged in the factory in the said processes for the first time after the date on which the Schedule comes into force.

21. Medical facilities and records of examination and tests. -

(1) The occupier of every factory to which the Schedule applies, shall -

a. employ a factory medical officer for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and

b. Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The records of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector-cum-Facilitator which shall be kept readily available for inspection by the Inspector.

22. Medical examination by theMedical Officer (Certifying Surgeon). -

1. Every worker employed in the said processes shall be examined by a Medical Officer (Certifying Surgeon) within 15 days of his first employment. Such examination shall include tests for detection of met haemoglobin in blood (haematological tests), Para-nitro-phenol in urine, pulmonary function tests and Central Nervous System tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer (Certifying Surgeon).

2. Every worker employed in the said processes shall be re-examined by a Medical Officer (Certifying Surgeon) at least once in every six calendar months and such re-examination shall, wherever the Medical Officer (Certifying Surgeon) considers appropriate includes all the tests specified in sub-paragraph (1)

3. The Medical Officer (Certifying Surgeon) after examining worker, shall issue a certificate of fitness in **Form 24**. The record of examination and re-examination carried out shall be entered in the Certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of these tests, shall also be entered by the Medical Officer (Certifying Surgeon) in a health register in **Form 42**.

4. The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

5. If at any time the Medical Officer (Certifying Surgeon) is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of these findings in the said certificate and the health register. The entry of his findings in those documents shall also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer (Certifying Surgeon), in which case the person affected shall be suitably rehabilitated.

6. No person who has been found until to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Medical Officer (Certifying Surgeon), after further examination, again certifies him fit for employment in those processes.

23. Exemptions. - Prohibited substances. -

1. The Chief Inspector-cum-Facilitator may be a certificate in writing (which he may at his discretion revoke at any time), subject to such conditions, if any, as may be specified therein, exempt any process in the course of which any of the prohibited substances is formed, processed, manufactured, or used, from the provisions of paragraph 5 if he is satisfied that the process is carried out in a totally enclosed and hermetically sealed system in such a manner that the prohibited substance is not removed from the system except in quantities no greater than that required for the purpose of control of the process or such purposes as is necessary to ensure that the product is free from any of the prohibited substances.

2. The Chief Inspector-cum-Facilitator may allow the manufacture, handling or use of benzidine hydrochloride provided that all the processes in connection with it are carried out in a totally enclosed system in such a manner that no prohibited substance other than benezidine hydrochloride is removed there from except in quantities no greater than that required for the purpose of control of the processes or such purposes as is substances and that adequate steps are taken to ensure that benezidine hydrochloride is, except while not in a totally enclosed system, kept wet with not less than one part of water to two parts of benezidine hydrochloride at all times.

APPENDIX

CAUTIONARY PLACARD / NOTICE

Carcinogenic dye intermediates

1. Dye intermediates which are nitro amino derivates or aromatic hydro carbons are toxic. You have to handle these chemicals frequently in this factory.
2. Use the various items of protective wear to safeguard your own health.
3. Maintain scrupulous cleanliness at all times. Thoroughly wash hands and feet before taking meals. It is essential to take a bath before leaving the factory.
4. Wash off any chemical falling on your body with soap and water. If splashed with a solution of the chemical, remove the contaminated clothing immediately. These chemicals are known to produce cyanosis. Contact the medical officer (Certifying Surgeon)or appointed doctor immediately and get his advice.
5. Handle the dye intermediates only with long handled scopes, never with bare hands.
6. Alcoholic drinks should be avoided as they enhance the risk of poisoning by the chemicals.
7. Keep your food and drinks away from work place. Consuming food, drinks or tobacco in any form at the place of work is prohibited.

Serious effects from work with toxic chemicals may follow after many years. Great care must be taken to maintain absolute cleanliness of body, clothes, machinery and equipment.

Schedule XIV. Manipulation of acids or alkalis

1. Definition.-

For the purpose of this Schedule, acids or alkalis include sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid or anhydrous liquid ammonia, sodium hydroxide or potassium hydroxide or mixtures thereof.

2. Application. -

This Schedule shall apply in respect of all factories or any part thereof in which acids or alkalis are manufactured, stored, handled, packed or used.

3. Flooring. -

The floor of every workroom to which this Schedule applies shall be made of impervious, fire-resistant material and shall be so constructed as to prevent collection of acids and alkalis. The surface of such floor shall be smooth and cleaned as often as necessary, and maintained in a sound condition.

4. Protective equipment. -

(1) The occupier shasll whenever so directed by an Inspector, provide, maintain in good order and keep in a clean condition for the use of all persons employed in any operation mentioned in paragraph 2, suitable protective wear for hands and feet, suitable aprons, acid handlers, goggles and suitable respirators.

(2) The protective equipment provided shall be used by the person concerned while at work.

5. Water facilities. -

Where any of the operations mentioned in paragraph 2 is carried on, there shall be provided close to the place of such operation, a source of water at a height of 2.1 meters secured from a pipe of 2.5 centimeters diameter and fitted with quick acting valve so that in case of injury to the worker by acid or alkalis, the injured part can be thoroughly flooded with water.

6. Cautionary Notice. -

A cautionary notice in the following form and printed in the language which majority of the workers employed understand, shall be affixed prominently close to the place where any of the operation mentioned in paragraph 2 is carried on and where it can be easily and conveniently read by the workers. If any worker is illiterate, effective steps shall be taken to explain carefully to him contents of the notice so affixed:-

CAUTIONARY NOTICE

DANGER

Acids and Alkalis cause severe burns and vapours thereof may be extremely hazardous. In case of contact, immediately flood the part effected with plenty of water for at least 15 minutes.

7. Transport. -

(a) Acids or alkalis shall not be filled, moved or carried except in containers, including crates of sound construction and of sufficient strength.

(b) Containers having a capacity of 11.4 liters of acids or alkalis shall be placed in a receptacle or crate and then carried by more than one person at a height below the waistline unless a suitable rubber-wheeled truck is used for the purpose.

8. Device for handling acids or alkalis. –

(a) Suitable tilting or lifting device shall be used for emptying jars and carboys containing acids.

(b) Alkalis shall not be handled by bare hands but by means of a suitable scoop.

9. Opening of valves. -

Valves fitted to containers holding acid or alkalis which do not work freely shall not be forced open. They shall be opened by a worker suitably trained for the purpose.

10. Cleaning tanks, stills etc. -

In cleaning out or removing residues from stills or other large chambers used for holding acids wooden implements shall be used to prevent production of arseniuretted hydrogen (arsine).

11. Storage. -

Acids shall not be stored in any room, used for storing turpentine, carbides, metallic powders and combustible materials.

12. Fire extinguishers.-

An adequate number of a suitable type of fire extinguishers shall be placed near each acid storage, which shall be regularly tested and refilled. Clear instructions as to how the extinguishers should be used printed in the language which majority of workers employed understand shall be affixed nearer each extinguisher.

13. Exemption. -

If in respect of any factory on an application made by the manager, the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or the infrequently of the process, or for any other reason, all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such factory, he may, by certificate in writing, exempt such factory from all or any of the provisions indicated in such certificate on such conditions as he may specify therein. Such certificate may, at any time, be revoked by the Chief Inspector.

Schedule XV. Manufacture of bangles and other articles from cinematograph film and toxic and inflammable solvents

1. Definitions. -

For the purposes of this Schedule -

(a) toxic inflammable solvents mean -

(i) solvents like acetone, tetrachlorethane, alcohol, denatured spirit, phenol, amylacitate, butyl, acetate, di-acetone, alcohol and such other substances which in the opinion of the Chief Inspector-cum-Facilitator are toxic and inflammable;

(ii) "bangle polish" and "bangle mixture" and such other solvents, by whatever trade name they are known, used in the manufacture of bangles and other articles from cellulose films.

(b) "Suspension" means suspension from employment in any processes in which toxic and inflammable solvents are used, by written certificate in the Health Register signed by the Certifying Surgeon, who shall have the power of suspension as regards all persons employed in any such process.

(c) "Approval" means approved by the Chief Inspector.

(d) "First employment" means first employment in any manufacturing process referred to in this Schedule and also re-employment in such manufacturing process following any cessation of employment for continuous period of three calendar months.

2. Application. -

This Schedule shall apply in respect of all factories or any part thereof in which the process of manufacture of bangles and other articles from cinematograph film or from toxic and inflammable substances or from both (hereinafter referred to as the said manufacturing process) is carried on.

3. Prohibition relating to employment of woman and young persons. -

No lactating mother and pregnant women or young person shall be employed or permitted to work in any room in which any of the said manufacturing process is carried out or in any room in which toxic or inflammable substances or both are stored or treated.

4. Medical Examination. -

(1) No person shall be employed in any of the said manufacturing processes unless he has been examined by the Medical Officer (Certifying Surgeon)within seven days preceding his first employment and certified fit for such employment.

(2) No person shall be employed in any of the said manufacturing processes unless he is re-examined by the Medical Officer (Certifying Surgeon)at least once during each calendar month or at such intervals as may be specified in writing by the Chief Inspector.

(3) The Medical Officer (Certifying Surgeon) shall examine persons employed in any of the said manufacturing processes by giving due notice to all concerned.

(4) A Health Register in **Form 42** containing the names of all workers employed in any of the said manufacturing processes shall be kept.

(5) No person after suspension shall be employed without written sanction from the Medical Officer (Certifying Surgeon) entered in or attached to the Health Register.

5. Protective clothing. –

Protective clothing shall be provided and maintained in good repair for all workers employed in the factory and such clothing shall be worn by the workers concerned. The protective clothing shall consist of a suitable apron and if so required by the Chief Inspector-cum-Facilitator head-coverings provided in that behalf. The head-coverings so provided shall be washed daily.

6. Ventilation. -

Every workroom in which cinematograph film or toxic and inflammable solvents or both are handled or manipulated or used shall be provided with inlets and outlets of adequate size so to secure and maintain efficient ventilation in all parts of the room during working hours.

Provided that the preparation of "cylinders" from cinematograph film & toxic and inflammable solvents, cutting of such cylinders into bangles and heat treatment of the bangles shall be carried out in an open space under cover, unless specially exempted by the Chief Inspector.

7. Drying of cinematograph film. -

(1) Drying of cinematograph film shall not be done except under such conditions as will prevent the cinematograph film from coming into contact or proximity with any source of heat or heated to surface in such a manner as would render the cinematograph film liable to be ignited or decomposed.

(2) Loose unwound cinematograph film shall be enclosed during drying in such a manner that a person in a room will be protected as far as practicable from an outburst of flame.

(3) The temperature in any part of a drying enclosure for loosed unwound cinematograph film other than a safety acetate film shall not at any time exceeding 100oF. A thermometer shall be kept available in every room in which such drying is done.

(4) Boiling of raw films either alone or in conjunction with other chemicals or heating of bangles and other articles made of films shall be carried out in an open space.

(5) A sufficient number of buckets filled with water shall be provided near the places where bangles are subjected to heat treatment.

8. Storage of raw materials. -

(i) Each roll or package of cinematograph film used in any of the said manufacturing process, shall except when required to be exposed for the purposes of the work carried on, be kept in separate box, properly closed and constructed of metal or other approved metal.

(ii) Without prejudice to the Cinematograph Film Rules, 1948, Municipal Rules and other Rules in force, all cinematograph film not being actually used or manipulated shall be kept in a room or chamber or similar enclosure approved by the Chief Inspector. Toxic and inflammable solvents stock shall be stored in approved place or containers.

9. Disposal of waste films. -

(i) All waste and scrap of cinematograph films shall be collected at frequent intervals during each day & be placed in strong metal receptacles fitted with self-closing lids and clearly marked with words "Film Waste".

(ii) No material liable to ignite spontaneously or anything likely to ignite or decompose cinematograph film shall be placed in the receptacle.

(iii) At the end of each day's work waste and scrap film shall be either transferred to a store room or removed from the premises.

(iv) Waste films and shavings shall be destroyed by burning in an open place under controlled conditions. They shall not be allowed to be thrown or scattered in or about the premises of the factory.

10. Prohibition for smoking. -

(i) No person shall be allowed to smoke in any room in which cinematograph film is manipulated, used or stored.

(ii) No open fire or any smoking materials or matches nor anything likely to ignite or decompose cinematograph film shall be allowed in any store room or in any room, in which cinematograph film or toxic inflammable solvents or both are stored manipulated or used;

Provided that the Chief Inspector-cum-Facilitator may permit the use of a coal sigree in the heat treatment of bangles subject to such conditions as he may specify in writing.

11. Caution with regard to electrical installation. -

All electrical installation and fittings shall be of flameproof type.

12. Floor of workrooms. -

The floor of every workroom in which any of the said manufacturing process are carried on shall be -

(a) of cement or similar material so as to be smooth and impervious to water.

(b) maintained in sound conditions;

(c) kept free from materials, plant or other obstruction not required for or produced in, the process carried on in the room;

(d) cleaned daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

13. Time to be allowed for washing. -

Before each meal and before the end of the day's work, at least ten minutes in addition to the regular meal times, shall be allowed for washing to each person who has been employed in any of the said manufacturing process.

14. Washing facilities. -

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons, a wash place under cover, with either -

(i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length, to allow at least 61.00 centimeters for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 61.00 centimeters; or

(ii) at least one wash basin for every five such persons employed at any one time fitted with a waste pipe and plug and having a constant supply of water laid on; and

(iii) a sufficient supply of clean towels made of suitable material which be renewed daily, which supply if so required by the Inspector, shall include a separate marked towel for each such worker; and

(iv) a sufficient supply of soap or other suitable cleansing material and of nail brushes.

15. Facilities for bathing. -

The Chief Inspector-cum-Facilitator may require any factory occupier to provide sufficient bath, accommodation for all persons engaged in all or in any of the said manufacturing processes and also sufficient supply of soap and clean towels.

16. Cloak room. -

If the Chief Inspector-cum-Facilitator so requires, there shall be provided and maintained for the use of persons employed in any of the said manufacturing processes -

(a) a cloak room for clothing put off during working hours with adequate arrangements for drying the clothing, if wet;

(b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 5.

17. Food, drinks, etc., prohibited in workrooms. -

(a) No food, drinks, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any of the said manufacturing processes is carried on.

18. Mess-room. -

If Chief Inspector-cum-Facilitator so requires, there shall be provided and maintained for the use of all persons employed in the factory and remaining on the premises during the meal intervals, a suitable mess-room, which shall be furnished with -

(a) sufficient tables and benches; and

(b) adequate means for warming food.

The mess shall be placed under the charge of a responsible person and shall be kept clean.

19. Fire-fighting appliances. -

(1) Adequate means for extinguishing fires having regard to the amount of celluloid present in the room at any one time shall be kept constantly provided for each work-room and store-room.

(2) The fire-fighting appliances shall be maintained in a good condition and kept in a position which is easily accessible.

20. Means of escape in case of fire. -

Adequate means of escape in case of fire shall be provided in every room in which cinematograph film is manipulated, used or stored and the means of escape shall not be deemed adequate unless -

(a) At least two separate exits are provided from every such room and two safe ways of escape from the building are available for all persons employed in the factory, and

(b) All doors and windows provided in connection with the means of escape are constructed to open outwards readily.

21. Cautionary notices. -

(i) Cautionary notices explaining the dangers to which workers are exposed due to any of the said manufacturing processes being carried shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed. The said notice shall be printed in the languages understood by the majority of workers employed in the factory.

(ii) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notices.

22. Exemption. -

If in respect of any factory the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or infrequency of the process or for any other reason, all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in the factory, he may, by a certificate in writing, exempt such factory from all or any of the provisions on such condition as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector-cum-Facilitator without assigning reasons.

Schedule XVI. Processes Involving manufacture, use or evolution of carbon disulphide and hydrogen sulphide

1. Definitions. -

For the purposes of this Schedule -

(a) (i) "breathing apparatus' means a helmet of face piece with necessary connections by means of which the person using it in a poisonous, asphysiating or irritant atmosphere breathes ordinary air, or

(ii) any other suitable apparatus approved in writing by the Chief Inspector;

(b) "churn" means the vessel in which the prepared cellulose pulp is treated with carbon disulphide.

(c) "dumping" means the drawing off of molten sulphate from the sulphur pots in the processes of manufacture of carbon disulphide;

(d) "efficient exhaust draught" means localized ventilation effected by mechanical means for the removal of gas or vapour, so as to prevent it as far as practicable from escaping into the air of any occupied room. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gas or vapour originates;

(e) "fume process" means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;

(f) "life belt" means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it each of which is sufficiently strong to sustain the weight of a man;

(g) "suspension" means suspension from employment in any fume process by written certificate in the Health Register (**Form 44**) signed by the Medical Officer (Certifying Surgeon), who shall have power of suspension as regards all persons employed in any such process.

3. Efficient exhaust draught and supply of fresh air. -

(1) No churn shall be opened unless it has been previously subjected to an efficient exhaust draught so that when the churn is opened the concentration of carbon disulphide in the working room does not exceed 20 parts per million and no worker shall be allowed to introduce his head inside the churn or enter it unless the concentration of carbon disulphide fumes inside the churn is 20 parts per million or less, and unless the exhaust draught arrangement is continued so as to reduce the concentration of carbon disulphide to 20 parts per million or less so long as the worker or his head is inside the churn.

(2) Hydrogen sulphide or carbon disulphide evolved in any room where any fume process is carried on shall be removed by an efficient exhaust draught.

(3) When the ventilation apparatus normally required in connection with the process referred to in clause (2) is ineffective or is stopped for any purpose whatever work in the said room which is not carried on mechanically without the presence of any person, shall not be carried on and the worker shall be made to leave the room as soon as possible but in any case not later that 15 minutes after such an occurrence:

Provided that any person wearing a breathing apparatus may be allowed to remain in the said workroom.

Explanation.- The Chief Inspector-cum-Facilitator may determine what constitutes normal ventilation apparatus in any given case on the representation duly made by the manager.

(4) In a room where any process is carried on so that irritant or offensive fumes are emitted there shall be provided suitable placed inlets of sufficient area for the supply of fresh air to room.

4. Air analysis. -

(1) Air analysis for the measurement of concentration of carbon disulphide and hydrogen sulphide shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector-cum-Facilitator at places where fume process is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose.

(2) If the concentration of either carbon disulphide or hydrogen sulphide exceeds 20 parts per million, the manager shall report the concentration reached and the duration of such concentration to the Chief Inspector. The report shall state the reasons for such increase.

(3) On receipt of such information, the Chief Inspector-cum-Facilitator may direct the manager to take such measures as may specify in that behalf and it shall be the duty of the manager to comply with such directions.

5. Electric fittings in carbon disulphide fume process room except the spinning room. -

All electric fittings in which a fume process evolving carbon disulphide is carried on, other than a spinning room, shall be flameproof construction and all electric conductors shall either be enclosed in metal conduits or to be lead sheathed.

6. Washing facilities. -

The occupier shall provide and maintain in a clean state and in good repair, for the use of all persons employed in a fume process, wash place under cover with at least one tap or stand pipe having a constant supply of clean water for every five such persons, the sufficient supply of soap and clean towels.

7. Protective equipment. -

(1) The occupier shall provide, maintain in good repair and keep in clean condition protective clothing and other equipment as specified in the Schedule below :

SCHEDULE

	Process	**Protective clothing and other equipment**
I	Dumping	Overalls, face-shields, gloves and foot-wear; all made of suitable material.
II	Spinning	Suitable aprons and gloves.
III	Processes involving or likely to involve contact with viscose solution	Suitable gloves and footwear.
IV	Any other process	Protective clothing and equipment as may be directed by the Chief Inspector-cum-Facilitator by an order in writing.

(2) The occupier shall make arrangements for the examination and cleaning of all the protective equipment at the close of each days work and for the repair or replacement thereof when necessary

8. Use of protective equipment. -

Every person shall use the protective equipment provided to him under paragraph 7.

9. Storage of protective equipment. -

A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to employees and no such equipment shall be stored at any place other than the room, rooms or lockers so provided.

10. Mess room. -

(1) There shall be provided an maintained for the use of all the persons remaining in the premises during the meal intervals, a suitable mess room providing accommodation of at least 0.9 sq.metres per head and furnished with -

(a) a sufficient number of tables and chairs or benches with back rests.

(b) an arrangement for washing hands and utensils, and

(c) adequate means for warming food.

(2) The mess room shall be kept under the charge of a responsible person and shall be kept clean.

11. Prohibition relating to smoking etc., in carbon disulphide fume process room. -

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process producing carbon disulphide is caused and notice in the language understood by the majority of the workers shall be posted in the factory prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such room :

Provided that fire, naked light or other means of producing naked light or spark may be carried in such room only when required for the purposes of the process itself under the direction of a qualified supervisor.

12. Prohibition to remain in fume process room. -

No person during his intervals for meals or rest shall remain in any room wherein fume process is carried on.

13. Medical Examination. -

(1) Every person employed in a fume process shall be examined by the Factory Medical officer once in every six months and by the Certifying Surgeon once on every 12 months or at such other intervals as may be specified in writing by the Chief Inspector-cum-Facilitator on a date or dates of which due notice shall be given to all such persons and such examination shall take place on the factory premises.

(2) Every person employed in a fume process shall present himself at the appointed time for such examination.

(3) A Health Register containing the names of all the persons employed in a fume process shall be kept in **Form 42**.

(4) No person, after suspension, shall be employed in a fume process without the written sanction of the Medical Officer (Certifying Surgeon) entered in the Health Register.

14. Breathing apparatus and measures. -

(1) There shall be provided in every factory where fume process is carried on, sufficient supply of -

(a) a breathing apparatus,

(b) oxygen and suitable means of its administration, and

(c) life belts.

(2) (i) The breathing apparatus and other appliances shall -

(a) be maintained in good condition and kept in an ambulance room or in some other place so as to be readily available, and

(b) be thoroughly inspected once every month by a competent person appointed in writing by the occupier.

(ii) A record of the condition of the breathing appratus and other appliances shall be entered in a book provided for that purpose which shall be produced when required by an Inspector.

(3) Sufficient number of workers shall be trained and given a periodic refresher course in the use of breathing apparatus and respirators and artificial respiration so that at least 2 such trained persons would be available in each fume process room during all the working hours of the factory.

(4) Respirators shall be kept properly labeled in clean, dry, light proof cabinets and if liable to be affected by fumes, shall be protected by suitable containers. Respirators shall be dried after use and shall be periodically disinfected.

15. Cautionary placard and instructions. -

Cautionary placards in the form specified by the Chief Inspector-cum-Facilitator and printed in the language of the majority of the workers employed shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangements shall be made by the occupier to instruct periodically all workers employed in a fume process regarding the health hazards connected with their duties and the best preventive measures and method to protect themselves.

16. Exemption. -

If in respect of any factory department or departments, the Chief Inspector-cum-Facilitator is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such department or departments, he may, be certificate in writing exempt such department or departments from all or any of such provisions subject to such conditions as he may specify therein. such certificate may at any time be revoked by the Chief Inspector-cum-Facilitator without assigning any reasons.

Schedule XVII. Manufacture and manipulation of dangerous pesticides, Fungicides, Herbicides and other Pesticides

1. Definitions. -

For the purpose of this Schedule -

(a) “insecticide”means—(i) any substance specified in the Schedule; or(ii) such other substances (including fungicides and weedicides) as the Central Government may, after consultation with the Board, by notification in the Official Gazette, include in the Schedule from time to time; or(iii) any preparation containing any one or more of such substances

(b) “manufacture”, in relation to any insecticide, includes—(i) any process or part of a process for making, altering, finishing, packing, labelling, breaking up or otherwise treating or adopting any insecticide with a view to its sale, and (ii) any process by which a preparation containing an insecticide is formulated.

(c) "dangerous insecticides" means insecticides or mixtures of such insecticides, fungicides, herbicides and other pesticides as are included in the list of dangerous insecticides in Schedule specified in the Insecticides Act, 1968;

(d) "Suspension" means suspension from employment in any process in which a dangerous pesticide is used by written certificate in the Health Register (**Form 42**) signed by the Medical Officer (Certifying Surgeon), who shall be competent to suspend all persons employed in such process;

(e) "first employment" means first employment in any manufacturing process referred to in this Schedule and also re-employment, in such manufacturing process following any cessation of employment for a continuous period exceeding three calendar months;

(f) "efficient exhaust draught" means localized ventilation effected by mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates;

(g) "manipulation" includes mixing, blending, filling, emptying, packing, handling or using of a dangerous pesticide.

2. Application. -

This Schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of a dangerous pesticide (hereinafter referred to as "the said manufacturing process") is carried on.

3. Cautionary placard. -

A cautionary placard and the form specified in Appendix II attached to this Schedule and printed in the language understood by the majority of the workers employed shall be affixed in prominent place frequented by them. In the factory where the placards can be easily and conveniently read by the workers, arrangement shall be made by the occupier to instruct periodically all workers employed in the said manufacturing process regarding the health hazards connected with it and methods to protect themselves.

4. Prohibition relating to employment of women and young persons. -

No lactating mother and pregnant women or young person shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in any room in which dangerous pesticide is stored.

5. Air space. -

In every room in which the said manufacturing process is carried on, there will be at least 500 cubic feet of air space, excluding any space occupied by machinery equipped or any other articles, for every person employed therein and in computing this air space, no height over 12 feet shall be taken into account.

6. Prohibition of the said manufacturing process without efficient exhaust draught. -

The said manufacturing process, shall not be carried on without the use of efficient exhaust draught when -

(a) a container holding a dangerous pesticide is emptied, or

(b) a dangerous pesticide is introduced into a container tank hopper to machine or filled in small sized packing, or

(c) a powder or a liquid is prepared from a dangerous pesticide, or

(d) a dangerous pesticide is blended unless the process is completely enclosed.

7. Floor of workroom. -

The floor of every workroom in which the said manufacturing process is carried on shall be -

(a) of cement of similar material so as to be smooth and impervious to water,

(b) maintained in sound condition.

(c) sloping and provided with gutters for adequate drainage, and

(d) thoroughly washed daily by means of hose-pipe.

8. Work Benches. -

The work benches at which a dangerous pesticide is manipulated shall -

(a) have a smooth surface and be of non-absorbent material preferably of stainless steel, and

(b) be cleaned daily.

9. Waste. -

(a) A suitable receptacle with tightly fitting cover shall be provided and used for depositing waste like cloth paper or other materials soiled with a dangerous pesticide.

(b) All such contaminated waste shall be destroyed by burning at least once a week.

10. Empty containers used for dangerous pesticides. -

Such containers shall be destroyed or thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.

11. Manual handling. -

A dangerous pesticide shall not be required or allowed to be manipulated by hand except by means of a long handled scoop.

12. Protective clothing. -

(1) Protective clothing shall be provided and maintained in good repair for all workers and such clothing shall be worn by the workers concerned. The protective clothing shall consist of -

(a) long pants and shirts or overalls with long sleeves and head coverings, and

(b) rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators.

Provided that where the pesticide contains oil, the rubber gloves, bolts, and aprons shall be of synthetic rubber.

(2) Where the worker has to handle a dangerous pesticide -

(a) containing phosphorous or nicotine the protective clothing shall be washed daily both inside and outside, and if the protective clothing mentioned in clause (a) of sub-paragraph (1) is soiled with such pesticides it shall be changed immediately, and

(b) not containing phosphorous or nicotine the protective clothing mentioned in clause (a) of sub-paragraph (1) shall be washed frequently.

13. Medical examination. –

(1)

(a) No person shall be employed in the said manufacturing process unless he has been examined by the Medical Officer (Certifying Surgeon) within seven days preceding his first employment and certified fit for such employment.

(b) No person shall be employed in the said manufacturing process unless he is re-examined by the Medical Officer (Certifying Surgeon)at least once in a every three calendar months.

(c) The Medical Officer (Certifying Surgeon)shall examine persons employed in the said manufacturing process by giving due notice to all concerned.

(d) A Health Register in **Form 42** containing the names of all workers employed in the said manufacturing process shall be kept.

(e) No person after suspension shall be employed without written sanction from the Medical Officer (Certifying Surgeon) entered in or attached to the Health Register.

(2) The Chief Inspector-cum-Facilitator may order any suitable clinical test or tests to be carried out in respect of the workers employed in any factory where the said manufacturing process is carried on at such intervals as he deems, fit.

14. Medical Facilities. -

(1) The occupier shall engage a factory medical officer who shall examine and if necessary treat in the premises of the factory all workers who handle dangerous pesticides for effects of excessive absorption at least once a week. The occupier shall make necessary arrangement to ensure quick availability of a factory medical officer in emergency cases.

(2) Medicaments including antidotes and other equipment necessary for treatment of excessive absorption of a dangerous pesticide shall be provided by the occupier.

(3) Records of such examination and treatment shall be maintained in such form as may be approved by the Chief Inspector-cum-Facilitator and shall be made available to Inspector-cum-Facilitator for inspection.

15. Time allowed for washing. -

Before each meal and before the end of the day's work, at least 10 minutes in addition to the regular rest interval, shall be allowed for washing to each person who has been employed in the said manufacturing process.

16. Washing and bathing facilities. -

(1) There shall be provided and maintained in cleanly state and in good repair for the use of all persons employed adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.

(2) The washing places shall have stand pipes spaced at intervals of not less than three feet.

(3) Not less than one half of the total number of washing place shall be provided with bath rooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided :

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

17. Food, Drinks, etc. prohibited in workrooms. -

No food, drink, pan, supari or tobacco shall be consumed or brought by any worker into any work room in which the said manufacturing process is carried on.

18. Cloak-Room. -

There shall be provided and maintained for the use of persons employed in the said manufacturing process :-

(a) A cloak room for clothing put off during working hours with adequate arrangements for drying clothing if wet; and

(b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 12.

19. Mess Room. -

There shall be provided and maintained for the use of all persons employed in the factory and remaining on the premises during the rest intervals, a suitable mess room which shall be furnished with -

(a) sufficient tables and benches; and

(b) adequate means for warming food.

The mess room shall be placed under the charge of responsible person and shall be kept clean.

20. Exemption. -

If in respect of any factory the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or infrequency of the process or for any other reason all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in the factory, he may, by a certificate in writing, exempt such factory, from all or any of the provisions, on such condition as he may specify therein. Such certificate may, at any time be revoked by the Chief Inspector.

21. Manipulation not to be undertaken. -

Manipulation of pesticide other than those maintained in Appendix I of the Schedule shall not be undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector.

APPENDIX I

List of Dangerous Pesticides

Parthion.

Diazeomon.

Hexaethy Tetra phosphate

Tetra ethyl Pyrophosphate

Tetra ethyl distriopy Pyrophosphate.

Demeton (Systex).

Scheadan (OMPH).

Para-Oxon (E. 600).

Methyl Parathion.

Dimefox.

Sulphotepp.

EPN.

Nicotine or its compounds.

Mercury compounds.

Methyl bromide.

Cyanides.

Chlordane.

Endrin.

Aldrin.

Dieldrin.

Texaphene.

Dinitro-o-cresol.

Arsenical compounds.

Cryolite.

Pentachlorophenol.

APPENDIX II

Cautionary Placard

1. Pesticides are generally poisonous substance.
2. Therefore in room where these are handles :
   (a) do not chew, eat, drink or smoke and keep food or drink away from pesticides.
   (b) Use the protective wear supplied e.g., gloves, aprons, clothes, boots, etc.
3. Either before meals or when any part of the body has come in contact with the pesticides, wash with soap and water.
4. Before leaving the factory, take a bath and change your clothing.
5. Do not use any container that has contained a pesticide as a pot for food or drink.
6. Do not handle any pesticide with bare hands but use a handled scoop.
7. Avoid spilling of any pesticide on body, floor, or table.
8. Maintain scrupulous cleanliness of body and clothing and of your surroundings.

In the case of sickness like nausea, vomiting or giddiness, inform the manager who will make necessary arrangements for treatment.

Schedule XVIII.Compression of Oxygen and Hydrogen produced by electrolysis of water

1. The room in which electrolysis plant is installed shall be separate from the plant for storing and compressing the oxygen and hydrogen and also the electric generator room.
2. (1) The purity of oxygen and hydrogen shall be tested by a competent person at hourly intervals at the following points :-
   (a) in the electrolyser room;
   (b) at the gas holder in-let; and
   (c) at the suction end of the compressor :

   "Provided that, if the compression unit and the gas holder inlets are fitted with automatic oxygen-in-hydrogen or hydrogen-in-oxygen purity indicating instruments, which trips the supply to the driving motors in the event of the purity dropping below 98 per cent testing of gas at hourly intervals at these two points shall not be necessary."

   (2) The purity figures shall be entered and signed by the person carrying out such tests in the register.
3. The oxygen and hydrogen gases shall not be compressed, if their purity as determined under paragraph 2 above falls below 98 per cent at any time.
4. There shall be at least two gas holder for each kind of gas compressed and the gas holders for the same as gas shall be provided with suitable arrangements to ensure that no gas holder is connected to the compressor and to the electrolysis at the same time, and only one gas holder is connected to the compressor line at any one time.
5. Each gas holder shall be fitted with a low level alarm and a trip switch to stop the compression in the event of the bell of the gas holder reaching within 39 centimetres from its lowest working level."
6. The water and caustic soda or caustic potash user for making lye shall be 1[of standard suitable for electrolysis.

7. Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the reversal of polarity and in addition an automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong connections either at the switch board or at the electric generator terminals.

8. "Oxygen and hydrogen gas pipes shall be painted with distinguishing colours. Whenever, the hydrogen gas pipe is opened for repairs or for any other purpose, on reconnection thereof it shall be purged of all air before hydrogen is allowed to pass throughout it."

9. All electrical wiring and apparatus in the electrolyser rooms and in the hydrogen compressor shall be of flame-proof construction or enclosed in flame-proof fittings and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compression and filling of the gases is carried on and such warning notices shall be exhibited in prominent places.

10. No part of the electrolyser plant and the gas holders and compressor shall be subjected to welding, brazing, soldering or cutting until steps have been taken to remove any explosive substance from that part and render the part safe for such operations and after the completion of such operations no explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.

11. No work of operations, repair, or maintenance shall be undertaken except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions, against risk of explosion is competent to supervise such work. No electric generator after erection or repairs shall be switched on the electrolysers unless the same is certified by the competent shall be switched on the electrolysers unless the same is certified by the competent person or under whose direct supervision erection or repairs are carried on to be in a safe condition and the terminals have been checked for the polarity as required by paragraph 7.

12. Every part of the electrolyser plant and the gas holders and compressor shall have a regular schedule of overhauling and checking and every defect noticed shall be rectified forthwith".

Schedule XIX. Handling and processing of Asbestos Manufacture of any Article of Asbestos and any other process of manufacture or otherwise, in which asbestos is used in any form

1. Application.-

This Schedule shall apply to all factories or parts of factories in which any of the following process is carried on:

(a) breaking, crushing, disintegrating, opening, grinding, mixing or sieving of asbestos and any other process involving holding and manipulation of asbestos incidental thereto

(b) all processes in the manufacture of asbestos textiles including preparatory and finishing processes;

(c) making of insulation slabs or sections, composed wholly or partly of asbestos, and processes incidental thereto;

(d) making or repairing of insulating mattresses, composed wholly or partly of asbestos, and processes incidental thereto;

(e) manufacture of asbestos cardboard and paper;

(f) manufacture of asbestos cement goods;

(g) application of asbestos by spray method;

(h) sewing, grinding, turning, abrading and polishing in dry state of articles composed wholly or partly of asbestos;

(i) cleaning of any room, vessel, chamber, fixture or appliance for the collection of asbestos dust, and

(j) Any other processes in which asbestos dust is given off into the work environment.

2. Definitions.-

For the purpose of this Schedule-

(a) "asbestos" means any fibrous silicate mineral and any admixture containing action life, amesite, anthophylite dhrysotile or any mixture thereof, crude, crushed or opened;

(1) the term "asbestos dust" means airborne particles of asbestos or settled particles of asbestos which are liable to become airborne in the working environment;

(2) the term "airborne asbestos dust" means, for purposes of measurement, dust particles measured by gravimetric assessment of other equivalent method;

(3) The term "respirable asbestos fibers" means asbestos fibers having a diameter of less than 3 cm, and a length-to-diameter ratio greater than 3: 1. Only fibers of a length greater than 5 cm shall be taken into account for the purpose of measurement.

(4) the term "exposure to asbestos" means exposure at work to air born respirable asbestos fibers or asbestos dust, whether originating from asbestos or from minerals, materials or products containing asbestos;

(b) "asbestos textile means yarn or cloth composed of asbestos or asbestos mixed with any other material;

(c) "approved" means approved for the time being in writing by the Chief Inspector;

(d) "breathing apparatus" means a helmet or face piece with necessary connections by means of which a person using its breathes air free from dust, or any other approved apparatus;

(e) “Efficient exhaust draught" means localized ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into air of any place in which work is carried on. No drought shall be deemed efficient which fails to control dust produced at the point where such dust originate.

(f) "Preparing" means crushing, disintegrating. and any other processes in or incidental to the opening of asbestos;

(g) "Protective clothing" means overalls and head covering which (in either case) shall when worn exclude asbestos dust.

3. Tools and Equipment.-

(1) Any tools or equipment used in processes to which this Schedule applies shall be such that they do not create asbestos dust above the permissible limit or are equipped with efficient exhaust drought.

(2)

(a) **Prohibition.-** Every process or equipment related to the milling of asbestos are or processing of asbestos fiber, release dust beyond the permissible limit, such process or use of such equipment shall be prohibited;

(b) the use of crocidolite and products containing this fiber shall be prohibited;

(c) spraying of all forms of asbestos shall be prohibited;

(d) The installation of friable asbestos insulation materials shall be prohibited.

(3) **Substitution.-** asbestos shall be used only when its risks can be prevented or controlled, otherwise, it shall be replaced, when technically feasible, by other materials or the use of alternative technologies, scientifically evaluated as harmless or less harmful;

(4) **Exposure to the workers.-** The number of persons assigned to work involving exposure to asbestos and the duration of their exposure shall be kept to the minimum required for the safe performance of the task;

(5) **Demarcation of area**. - The area of activity which involves exposure to asbestos shall be clearly demarcated and indicated by warning signs restricting unauthorized access.

4. Exhaust draught.-

(1) An efficient exhaust drought shall be provided and maintained to control dust from the following processes and machines:

(a) manufacture and conveying machinery namely.-

i. preparing, grinding or dry mixing machines;

ii. guarding, card waste and ring spinning machines, and looms;

iii. machines or other plant fed with asbestos; and

iv. machines used for the sewing, grinding, turning drilling, abrading or polishing; in the dry state, of articles composed wholly or partly of asbestos;

(b) cleaning and grinding of the cylinders or other parts of a carding machines;

(c) chambers, hoppers or other structures into which loose asbestos is delivered or passes;

(d) work-benches for asbestos waste sorting or for other manipulation of asbestos by hand;

(e) work-places at which the filling or employing of sacks, skips or other portable containers, weighing or other process incidental which is effected by hand, is carried on;

(f) sack cleaning machines;

(g) mixing and blending of asbestos by hand; and

(h) Any other process in which dust is given off into the work environment.

(2) Exhaust ventilation equipment provided in accordance with sub-paragraph (1) shall, while any work of maintenance or repair to the machinery, apparatus or other plant or equipment in connection with which it is provided is being carried on, be kept in use so as to produce an exhaust draught which prevents entry of asbestos dust into the air of any work place.

(3) Arrangements shall be made to prevent asbestos dust discharged from exhaust apparatus being drawn into the air of any work room.

(4) The asbestos bearing dust removed from any workroom by the exhaust system shall be collected in suitable receptacles or fitter bags which shall be isolated from all work areas.

5. Testing and examination of ventilating system.-

(1) All ventilating system used for the purpose of extracting or suppressing dust as required by this Schedule shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or tests shall be rectified forthwith.

(2) A register in **Form 42** containing particulars of such examinations and tests and the state of the plant and the repairs or alternations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

6. Segregation in case of certain process.-

Work places where the use of asbestos may result in the release of asbestos dust into the air shall be separated from the general working environment in order to avoid possible exposure of other workers to asbestos.

7. Storage and distribution of loose asbestos.- All loose asbestos shall, while not in use, be kept in suitable closed receptacles which prevent the escape of asbestos dust there form. Such asbestos shall not be distributed within a factory except in such receptacles or in a totally enclosed system of conveyance.

8. Asbestos sacks.-

(1) All sacks used as receptacles for the purpose of transport of asbestos within the factory shall be constructed of impermeable materials and shall be kept in good repair.

(2) A sack which has contained asbestos shall not be cleaned by hand-beating but by a machine, complying with paragraph 3 (1).

(3) Occupier shall dispose of waste containing asbestos in a manner that does not pose a health risk to the workers concerned, including those handling asbestos waste, or to the population in the vicinity of the enterprise.

9. Maintenance of floors and workplaces.-

(1) In every room in which any of the requirements of this Schedule apply-

(a) the floor, work-benches, machinery and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use; and

(b) the floors shall be kept free from any materials, plant or other article not immediately required for the work carried on in the room, which would obstruct the proper cleaning of the floor.

(2) The cleaning as mentioned in sub-rule (1) shall, so far as practicable, be carried out by means of vacuum cleaning equipment so designed and constructed and so used that asbestos dust neither escapes not is discharged into the air of any work-place.

(3) When the cleaning is done by any method other than that mentioned in sub-paragraph (2), the person doing cleaning work and any other person employed in that room shall be provided with respiratory protective equipment and protective clothing.

(4) The cleaning equipment used in accordance with provisions of sub-paragraph (2), shall be properly maintained and after each cleaning operation, its surfaces kept in a clean state and free from asbestos waste and dust.

(5) Asbestos waste shall not be permitted to remain on the floors or other surface at the work place at the end of the working shift and shall be transferred without delay to suitable receptacles. Any spillage of asbestos waste occurring during the course of the work at any time shall be removed and transferred to the receptacles maintained for the purpose without delay.

10. Breathing Apparatus and Protective clothing.-

(1) An approved breathing apparatus and protective clothing shall be provided and maintained in good conditions for use of every person employed-

(a) in chambers containing loose asbestos;

(b) in cleaning, dust settling or filtering chambers or apparatus;

(c) in cleaning the cylinders, including the defer cylinders, or other parts or a carding machine by means of hand stickles, and

(d) in filling,, beating or leveling in the manufacture or repair of insulating mattresses, and

(e) in any other operation of circumstances in which it is impracticable to adopt technical means to control asbestos dust in the work environment within the permissible limit.

(2) Suitable accommodation in conveniently accessible position shall be provided for the use of persons when putting on or taking off breathing apparatus and protective clothing provided in accordance with this rule and for the storage of such apparatus and clothing when not in use.

(3) All breathing apparatus and protective clothing when not in use shall be stored in the accommodation provided in accordance with sub-rule (2) above.

(4) All protective clothing in use shall be dedusted under an efficient exhaust draught or by vacuum cleaning and shall be washed at suitable intervals. The cleaning schedule and procedure shall be such as to ensure the efficiency in protecting the weather.

(5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.

(6) A record of the cleaning and maintenance and of the condition of the breathing apparatus shall be maintained in a register provided for the purpose which shall be readily available for inspection by an Inspector.

(7) No person shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of that equipment.

(8) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

11. Separate accommodation for personal clothing.-

A separate accommodation shall be provided in a conveniently accessible position for all persons employed in operations to which this Schedule applies for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) to prevent contamination of personal clothing.

12. Washing and bathing facilities.-

(1) There shall be provided and maintained in a clean state and in good repair, for the use of all workers employed in the process covered by the Schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 15 persons employed.

(2) The washing places shall have stand pipes placed at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathroom.

(4) Sufficient supply of clean towels made of suitable material shall be provided :

Provided, that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

(6) At least thirty minutes time shall be allowed, within working hours, for changing showering or washing after the work shift.

13. Mess room.-

(1) There shall be provided and maintained for the use of all workers employed in the factory covered by this Schedule, remaining on the premise during the rest intervals, a suitable mess room which shall be furnished with :

(a) sufficient tables and benches with back rest, and

(b) Adequate means for warming food.

(2) The mess room shall be placed under the charge of a responsible person and shall be kept clean.

14. Prohibition of employment of young persons.-

No young person shall be employed in any of the process covered by this Schedule.

15. Prohibition relating to smoking.-

No person shall smoke in any area where processes covered by this Schedule are carried on. A notice in the language understood by majority of the workers shall be posted in the plant prohibiting smoking as such areas.

16. Cautionary Notice.-

(A) Cautionary notice shall be displayed at the approaches and along the parameter of every asbestos processing area to warn all persons regarding-

(a) Hazards to health from asbestos dust.

(b) Need to use appropriate equipment.

(c) Prohibition of entry to unauthorized persons or authorized persons but without protective equipment.

(B) Inform from occupier.- The following information shall be sent by the occupier of the factory :

(a) the type and quantity of asbestos used;

(b) the activities and processes carried out;

(c) the products manufactured;

(d) the number of workers exposed and the level and frequency of their exposure;

(e) the preventive and projective measures taken;

(f) Any other information necessary to safeguard the worker's health.

(C) Such notices shall be in the language understood by the majority of the workers.

(D) (1) Labeling. - The labeling shall be printed in the language or languages in common use in the state indicating that the container or product contains asbestos, the inhalation of asbestos dust carries a health risk and appropriate protective measures shall be taken.

(2) The occupier of the factory shall provide a data-sheet listing the asbestos, content, health hazards and appropriate protective measures for the material or product to consumers.

(E) Occupier shall provide workers with adequate information in an appropriate form on the health hazards to their families or others which could result from taking home clothing contaminated by asbestos dust.

17. Air Monitoring.-

(1) To ensure the effectiveness of the control measures, monitoring of asbestos fiber in air shall be carried out once at least in every shift and measured or calculated in terms of time-weighted average concentration and the record of the results so obtained shall be entered in a register specially maintained for the purpose of qualified person Memberance Filter Technique (MFT) shall be used for the measurement of the air borne asbestos fiber dust.

(2) The records of the monitoring of the working environment shall be kept for a period of not less than 30 years.

18. Medical facilities and records of medical examinations and tests.-

(1) The occupier of every factory or part of the factory to which the Schedule applies, shall-

(a) employ a factory medical officer for medical surveillance of the workers covered by this Schedule whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator:

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector-cum-Facilitator, which shall be kept readily available for inspection by the Inspector.

19. Medical examination by Medical Officer (Certifying Surgeon). -

(1) Every worker employed in the processes specified in paragraph (1) shall be examined by a Medical Officer (Certifying Surgeon)within 15 days of his first employment. Such examination shall include pulmonary function tests, tests for detecting asbestos fibres in sputum and chest X-ray. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer (Certifying Surgeon).

(2) Every worker employed in the processes referred to in sub-paragraph (1) shall be re-examined by a Medical Officer (Certifying Surgeon) at least once in every twelve calendar months. Such examinations shall, wherever, the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1) except chest X-ray which shall be carried out once in 3 years.

(3) The Medical Officer (Certifying Surgeon) after examining a worker, shall issue a Certificate of Fitness in **Form 24**. The record of examination and re-examination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer (Certifying Surgeon) in a health register in **Form 42**.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Medical Officer (Certifying Surgeon) is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said process

(6) No person who has been found unfit to work as said in sub-paragraph (5), shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

20.

(1) Appropriate medical examination shall continue to be available to workers after termination of an assignment involving exposure to asbestos.

(2) The medical examinations, tests and investigations provided in this Schedule shall be carried out as far as possible in working hours and shall entail no cost to the worker.

(3) The results of medical examination shall be used to determine health status with regard to exposure to asbestos and shall not be used to discriminate against the worker.

(4) Workers shall be informed in an adequate and appropriate manner, of the results of the medical examinations and receive individual advice concerning their health in relation to their work.

(5) When continued assignment to work involving exposure to asbestos is found to be medically inadvisable, every effort shall be made to provide the workers concerned with other means of maintaining their income.

(6) Records of the monitoring of exposure of workers as well as the sections of their medical files relevant to health hazards due to exposure to asbestos and chest radiographs shall be maintained and keep maintaining the health record of every worker upto a minimum period of 40 years from the beginning of the employment or 15 years after retirement or cessation of the employment whichever is later.

In case of closure of the factory or after termination of the assignment of a worker, records and information kept in accordance with paragraph 20 (6) above shall be deposited in the office of the Chief Inspector-cum-Facilitator, Gujarat State].

Schedule XX. Manufacture of articles from refractory materials including manufacture of refractory bricks

1. Application:- This Schedule shall apply to the following processes:-

(1) handling, moving, breaking, crushing, grinding or sieving of any refractory materials containing not less than 25 per cent total silica for the purpose of manufacture:-

(a) of articles used in the construction of furnaces and flues,

(b) of crucibles, and

(c) of compositions or other materials used in the preparation of moulds in which metals are cast; or

(2) any process in the manufacture of refractory bricks as hereinafter defines:

Provided that, nothing in this Schedule shall apply:-

(a) to handling, moving, mixing or sieving of natural sand, or

(b) to the manipulation of rotten rock in the preparation of moulds used in metal foundaries:

Provided further that, if the Chief Inspector-cum-Facilitator is satisfied in respect of any factory orpart thereof that owing to the special conditions of work or otherwise, any of the provisions of this Schedule can be suspended or relaxed without any danger to the health of the person employed therein, he may by an order in writing grant such suspension or relaxation for such period and no such conditions as he may think fit. Any such order may be revoked at any time.

2. Definitions:- For the purposes of this Schedule:-

(a) "Refractory material" means any refractory material containing not less than 25 percent total silica;

(b) "refractory bricks" means any brick or article composed of refractory material and containing not less than 25 percent total silica:

(c) "Efficient exhaust draught" means localised ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into the air of any place in any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove the dust produced at the point where such dust originates.

3. No refractory material shall be broken in pieces by manual labour unless is carried out in the open air:-

Provided that, where it is not practicable to carry out this process in open air. the process shall be carried out under an efficient exhaust draught.

4. No refractory material, unless it is so wet that dust will not be produced, shall be crushed or ground in a stone crushing or a grinding machine unless such machine is provided with :-

(a) an efficient exhaust draught and efficient dust collecting appliances; or

(b) an efficient water or steam spray:

Provided that, every grinding machine wherein any refractory material is ground in dry state, shall be, totally enclosed and connected to a mechanical exhaust system so as to prevent effectively any escape or dust outside the casing of the machine by maintaining a pressure below the atmospheric pressure within the casing of the machine:

Provided further that, all processes of crushing and grinding shall be effectively isolated from other processes.

5. All chutes, conveyors, elevators, screens, selves and mixers used for manipulating refractory material shall, unless the material is so wet that dust will not be produced, be enclosed and be provided with efficient exhaust draught.

6. No refractory material so dry as to produce dust shall:-

(a) be loaded into any wagon or other receptacle for transport, unless it has been placed in suitable dust-proof container so damped as to preclude dust; or

(b) be unloaded from any wagon or other receptacle for transport unless it has been so damped as to preclude dust or unless the work is done under an efficient exhaust draught;

(c) be shovelled or racked or otherwise manipulated by means of hand tools in any manufacturing process, unless it has been so damped as to preclude or unless the work is done under an efficient exhaust draught :

Provided that, paragraph (b) of this rule shall not apply to refractory material in the form of rock or pebbles before it is manipulated in any manufacturing process.

7. (a) The floors of all places where refractory bricks are dried, other than the floors of tunnels, ovens or chamber dries not normally entered by persons employed shall, after each lot of refractory bricks has been removed, be carefully cleaned of all debris and the part, being cleaned shall be kept damped while the cleaning is being done.

(b) There shall be provided in every such place a constant supply of water laid on under adequate pressure with sufficient connections and flexible branch pipe and sprinkler to enable water to be supplied directly to every part of the floor.

8. No drying stoves in which refractory bricks are backed by fires before being placed in the kilns shall be used.

9. The surface of every floor or place where persons are liable to pass shall be cleaned of debris of refractory material once at least during each daily period of employment or where shifts are worked, once during each shift. Such debris, unless it is immediately required for use in the process, shall be effectively damped and either be placed in covered receptacles, or be otherwise stored in such manner as to prevent the escape of dust into the air or near to any place where any person is employed.

10. Where plates are used, whether portable or forming part of the floor, on which refractory bricks are dried, such plates shall be freed from adherent material only by a wet method or by such other method as will prevent the escape of dust into the air.

11. The dust or powder of refractory materials shall not be used for sprinkling the moulds in refractory brick making:

Provided that, nothing in this paragraph shall be deemed to prevent the use of natural sand for the purpose of sprinkling the moulds.

12. No worker shall be allowed to work on any dusty process or at any place where dust of any refractory materials is present in the atmosphere:

Provided that, in any emergency a worker may be allowed to work at such process or place if he wears a suitable and efficient dust mask or breathing apparatus.

13. Medical examination.:-

(a) Every worker employed on any of the processes specified in sub-paragraphs (1) and (2) of paragraph 1 shall be medically examined in such manner and at such intervals as may be specified by any rules made under the Workmen's Compensation Act, 1923 (VIII of 1923), or if no such rules have been framed under the said Act, every worker shall be medically examined by the Medical Officer (Certifying Surgeon) before employment on any of the aforesaid processes and at interval not exceeding six months thereafter.

(b) Subject to sub-paragraph(c), an X-ray' examination of the chest of every worker referred to in sub-paragraph(a) shall be carried out:-

(i) if he is already in employment on the date of the coming into force of the Code, within six months of such date and at an interval of every three years, thereafter;

(ii) if he is employed after such date, within one month of the date of his employment and at an interval of every three years thereafter, and the result of every such X'ray- examination shall be produced before the Medical Officer (Certifying Surgeon) within a month of the examination.

(c) If the Medical Officer (Certifying Surgeon), during the course of medical examination of any worker under sub-paragraph (c) has reason to, suspect onset of any chest disease, he may direct the manager or the occupier to get an 'X' ray examination of the worker done and to produce the 'X' ray plate before him within a specified time and on receipt of such direction the manager or the occupier, as the case may be, shall carry out the direction.

(d) The Medical Officer (Certifying Surgeon) shall grant to each worker examined a certificate specifying therein whether or not the worker was considered fit to be employed on any of the processes specified in paragraph.1.

(e) The manager shall maintain a register in which the findings and recommendations of the Medical Officer (Certifying Surgeon)in respect of every worker and in respect of every medical examination shall be maintained duly signed by the Medical Officer (Certifying Surgeon).

(f) A worker not declared fit shall not be employed on any of the aforesaid processes and he shall be employed on only such other process or he shall be subject to such other examination or treatment as may be directed by the Medical Officer (Certifying Surgeon).

(g) No fees shall be charged from any worker for the medical examination and it shall be the responsibility of the occupier and the manager to comply with the provisions of this Schedule.

14. In case any existing plant or machinery needs alteration, modification or replacement or in case any new plant is required, to be installed, to comply with the provisions of this Schedule, such alteration, modification, replacement or installation of the plant or machinery shall be carried on within a period not exceeding one year from the date of the coming into force of the Code:

Provided that, the Chief Inspector-cum-Facilitator in consideration of special and exceptional circumstances by an order in writing may extend this period for such reasonable length of time as he may think fit.

Schedule XXI. Chemical Works

PART -1

1. Application — This Schedule shall apply to all manufactures and processes incidental thereto carried on in chemical works.

2. Definitions —For the purpose of this Schedule-—

(a) **"Chemical Works"** means any factory or such parts of any factory where any process or activity in relation to the industries is specified in the First Schedule of the Code;

(b) **"Efficient exhaust draught"** means localized ventilation effected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air or any place in which work is carried on.

(c) **"bleaching powder"** means the bleaching powder commonly called chloride of lime;

(d) **"chlorate"** means chlorate or per chlorate;

(e) **"caustic"** means hydroxide of potassium or sodium,

(f) **"chrome process"** means the manufacture of chromate or bichromate of potassium or sodium, or the manipulation, movement or other treatment of these substances.

(g) **"nitro or amino process"** means the manufacture of nitro of amino derivatives of phenol and of benzene or its homologues, and the making of explosives with the use of any of these substances:

(h) the term '**permit to work**' system means the compliance with the procedures laid down under para 20 of Part II:

(i) **"Toxic substances"** means all those substances which when they enter into the human body, through inhalation or ingestion or absorption through skin, in sufficient quantities, cause fatality or exert serious affiction of health, or chronic harmful effects on the health of persons exposed to it due to its inherent chemical effects. In respect of substances whose Threshold Limit Value (TLV) is specified in the Schedule-9 of the Rule 83-I of the OSHW Rule, exceeding the concentration specified therein would make the substance toxic;

(j) **"Emergency"** means a situation leading to a circumstance or set of circumstances in which there is danger to the life or health of persons or which could result in big fire, explosion, or pollution to the work and outside environment. Affecting the workers or neighbourhood in a serious manner, demanding immediate action;

(k) **"dangerous chemical reactions"** means high speed reactions, run-away reactions, delayed reactions, pressure reaction, exothermic reaction etc. and are characterized by evolution of large quantities of heat intense release of toxic or flammable gases or vapour, sudden pressure build-up etc;

(l) **"manipulation"** means mixing, blending filling, emptying grinding, sieving, drying, packing, sweeping, handling, using etc.;

(m) **"Approved personal protective equipment"** means items of personal protective equipment conforming to the relevant Indian Standard Institute specifications (ISI) or in the absence of it. personal protective equipment approved by the Chief Inspector-cum-Facilitator;

(n) **"appropriate personal protective equipment"** means that when the protective equipment is used by the worker, he shall have no risk to his life or health or body ; and

(o) **"Confined space"** means any space because of its construction as well as in relation to the nature of the work carried therein and where hazards to the persons entering into working inside exist or are likely to develop during working.

PART II

General Requirement

Applying to all the works in the First Schedule of the Code.

1. Housekeeping

(1) Any spillage of materials shall be cleaned up before further processing.

(2) Floors, platforms, stairways, passages and gangways shall be kept free of any obstructions.

(3) There shall be provided easy means of access to all parts of the plot to facilitate cleaning.

2. Improper use of chemicals.—

No chemicals, solvents, or empty containers containing chemicals or solvents shall be permitted to be used by workers for any purposes other than in the processes for which they are supplied.

3. Prohibition on the use of food, etc.—

No food, drink, tobacco, pan or any edible item shall he stored or heated or consumed in or near any part of the plant or equipment.

4. Cautionary Notices and instructions.—

(1) Cautionary notice in a language understood by the majority of workers shall be prominently displayed in all hazardous areas drawing the attention of all workers about the hazards to health, hazards involving fire and explosion and any other hazard such as consequences of testing of material or substances used in the process or using any contaminated container for drinking or eating, to which the workers' attention shall be drawn for ensuring their safety and health.

(2) In addition to the above cautionary notice, arrangement shall he made to instruct and educate all the workers including illiterate workers about the hazards in the process including the specific hazards to which they may be exposed to, in the normal course of their work. Such instructions and education shall also deal with the hazards involved in unauthorised and unsafe practices including, the properties of substances used in the process under normal conditions as well as abnormal conditions and the precautions to be observed against each and every hazard. Further, an undertaking from the workers shall be obtained within l month of their employment and for old workers employed within one month of coming into operation of these rules, to the the effect that they have read the contents of the cautionary notices and instructions, understood by them and would abide by them. The training and instructions to all workers and all supervisory personnel shall include the significance of different types of symbols and colours used on the tables stuck or painted on the various types of containers and pipe-lines.

5. Evaluation and provision of safeguards before the commencement of process.-

(1) Before commencing any process or any experimental work, or any new manufacture covered under first Schedule of the Code, the occupier shall take all possible steps to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions including the dangerous chemical reactions. The properties of the raw materials used, the final products to be made, any by-products derived during manufacture, shall be carefully studied, and provisions shall be made for dealing with any hazards including effects on workers may occur during manufacture.

(2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken from the design stage to disposal stage for ensuring the safety as in sub- para (1) above shall be sent to the Chief Inspector-cum-Facilitator at the earliest but in no case less than 15 days before commencing manufacture, handling, or storage of any of the items covered under Frst Schedule of the Code whether on experimental basis, or as pilot plant or as trial production or as large scale manufacture.

(3) The design, construction, installation, operation, maintenance and disposal of the buildings, plant and facilities shall take into consideration effective safeguards against all the safety and health hazards so evaluated.

(4) The requirements under the sub-Para (1) to (3) shall not act in lieu of or in derogation to, any other provisions contained in any other Act governing the work.

6. Authorised entry.—

Authorised persons only shall be permitted to enter any section of the factory of plant on or where dangerous chemical reactions are taking place or where hazardous chemicals are stored.

7. Examination of instruments and safety devices.—

(1) All instruments and safety devices used in the process shall be tested before taking into use and after carrying out any repair to them and examined once in a six month by a competent person, records of such tests and examinations shall be maintained and shall be available while inspection.

(2) All instruments and safety devices used in the process shall be operated daily or as often as it is necessary, to ensure it's effective and efficient working at all times.

8. Electrical installations.-

All electrical Installations used in the process covered in the first Schedule of the Act, shall be of an appropriate type to ensure safety against the hazard prevalent in that area such as suitability against dust, dampness. corrosion flammability and explosivity etc. and shall conform to the relevant Indian Standard Institute (ISI) specifications governing their construction and use for that area.

9. Handling and storage of chemicals.-

(1) The containers for handling and storage of chemicals shall be of adequate strength taking into consideration the hazardous nature of the contents. They shall also be provided with adequate labelling and colour-coding arrangements to enable identification of the containers and their contents indicating the hazards and safehandling methodand shall conform to the respective indian Standard Institute (ISI) standards. The instructions given in the label shall be strictly adhered to. Damaged containers shall be handled only under supervision of a knowledgeable and responsible person and spillage shall be rendered innocuous in a safe manner using appropriate means.

(2) The arrangements for the storage of chemicals including charging of chemicals in reaction vessels, containers shall be such as to prevent any risk of fire or explosion or formation of toxic concentration of substances above the limits specified in second Schedule of the Act.

(3) Without prejudice to the generality of the requirements in sub-Para (2) above, the arrangements shall have suitable ventilation facilities and shall enable the maintenance of safe levels in vessels and containers. Such arrangements shall also take into consideration, the type of flooring and the capacity of flooring and the compatibility requirements of substances with other chemicals store nearby.

(4)

(a) Storage of chemicals and intermediate products, which are highly unstable, reactive, or explosive, shall be limited to the quantities required for two months use.

(b) Whenever the quantities laid down in the above clause (a) are to be exceeded, the permission of the Chief Inspector-cum-Facilitator shall be obtained.

(c) Notwithstanding anything contained in clause (a) and (b) above, the Chief Inspector-cum-Facilitator may direct any factory carrying out processes covered in the first Schedule of the Act, to further limit the storage of hazardous substances to quantitics less than two months in considerations of safety.

(5) Stand by arrangements equal to the biggest container shall always be available to transfer the toxic and hazardous substances quickly into the standby storage facility, if any defect developes in any of the container resulting in the release of toxic substances.

(6) Any storage facility constructed using non-metallic material such as Fiber glass Reinforced Plastics (FRP) all glass vessels etc. shall have adequate strength to withstand the stress. If any, exterted by the contents and shall be properly anchored, working platforms, access ladders, pipe lines etc. used in such storage facility shall not have any support on the structure of the storage facility and shall be independently supported.

10. Facility for isolation.-

The plant and equipment shall be so constructed and maintained as to enable quick isolation of plant or part of plant or equipment, with appropriate indication. One copy of the layout plan indicating the isolation facilities shall always be available with the security, the maintenance and the health and safety personnel, and these isolation facilities shall be checked for its effectiveness once in a month.

11. Personal protective equipment.-

(1) All workers to the hazards in the processes covered by the Schedule shall be provided with appropriate and approved type of personal protective equipment. Such equipment shall be in a clean, sterite and hygienic condition before issue.

(2) The occupier shall arrange to inform, educate and supervise all the workers in the use of personal protective equipment while carrying out the job.

(3) As regards any doubt regarding the appropriateness of any personal protective-equipment, the decision of the Chief Inspector-cum-Facilitator shall be final.

12. Alarm systems.-

(1) Suitable and effective alarm systems giving audible and visible indications. shall be installed at the control-room as well as in all stragegic locations where process-control arrangements are available so as to enable corrective action to be taken before the operational parameters exceed the predetermined safe levels or lead to conditions conducive for an outbreak of fire or explosion to occur;

Such alarm system shall be checked daily and tested once in a six monthto ensure its performance efficiency at all times.

(2) The Chief Inspector-cum-Facilitator may direct such system to be installed in case of plants or processes where toxic materials are being used and spillage or leakage of which may cause widespread poisoning in or around the plant.

13. Control of escape of substances into the work atmosphere.—

(1) Effective arrangements such as enclosure, by-pass, efficient exhaust draught or maintenance of negative pressure etc. shall be provided in all plants, containers, vessels, sewers, drains, flues, ducts, culverts, and burried pipes and equipment, to control the escape and spread of substances which are likely to give rise to fire or explosion or toxic hazards during normal working and in the event of accident or emergency.

(2) In the event of the failure of the arrangements for control resulting in the escape of substances in the work atmosphere, immediate steps shall be taken to control the process in such a manner, that further escape is brought down to the safe level.

(3) The substances that would have escaped into the work atmosphere before immediate steps as required in sub-para (2) shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably irealiiig the substances.

14. Conduct of dangerous chemical reactions.—

Suitable provision, such as automatic and/or remote control arrangernents, shall be made for controlling the effects of 'dangerous chemical reactions'. In the event of failure of control arrangements automatic flooding or blanketing or other effecive arrangements shall come into operation.

15. Testing examination and repair of plant and equipment.—

(1) All parts of plant, equipment and machinery used in the process, which in the likely event of their failure may give rise to an emergent situation, shall be tested by a competent person before commencing process and retested at an interval of two years or after carrying out repairs to it. The competent person shall identify the parts of the plant, equipment and machinery required to be tested aforesaid and evolve a suitable testing procedure, in carrying out the test as mentioned above in respect pressure vessels or reaction vessels the following precautions shall be observed, namely.—

(a) Before the test is carried out, each vessel shall he thoroughly cleaned and examined externally, and as far as practicable, internally for surface defects, corrosion, and foreign matter. During the process of cleaning and removal of sludge, if any, all due precautions shall be taken against fire or explosion, if such sludge is of pyropheric nature or contains spontaneously combustible chemicals,

(b) as soon as the test is completed, the vessel shall be thoroughly dried internally and shall be clearly stamped with the marks and figures indicating the person by whom testing has been done and the date of test; and

(c) 1. any vessel which fails to pass the test or which for any other reason is found to be unsafe for use shall be destroyed or rendered unusable under intimation to the Chief Inspector.

2. All parts of plants, equipment, machinery which in the likely event of failure may give rise to an emergent situation shall be examined once in a six month by the competent person.

3. Records of testing and examination referred to in paragraphs (1) and (2) shall be maintained as long as that part of the plant, equipment and machinery are in use.

4. All repair work including alteration, modification and addition lo be carried out to the plant, equipment and machinery shall be done under the supervision of a responsible person who shall evolve a procedure to ensure safely and health of persons doing the work. When repairs or modification is done on pipeline, and joints are required to be welded, butt welding of joints shall be preferred.

Wherever, the responsible person shall regulate the aforesaid work through a ‘permit to work system.'

16. Staging—

(1) All staging that is erected for the purpose of maintenance work or repair work or for work connected with entry into confined spaces and used in the processes included in first Schedule of the Act, shall be state, rigid and constructed out of substantial material of adequate strength, such staging shall confirm to the respective Indian Standard specifications.

(2) Staging shall not be erected over any closed or open vessel unless the vessel is so constructed and ventilated lo prevent exposure of person working on the stages.

(3) All the staging constructed for the purpose of this Para shall have appropriate access which are safe and shall be fitted with proper hand-rails lo a height of one metre and toe board.

17. Seating arrangements. —

The seating arrangements provided for the operating personnel working in processes covered in the first Schedule shall be located in a safe manner as to prevent the risk of exposure to toxic, flammable and explosive substances evolved in the work environment in the course of manufacture or repair or maintenance, either due to failure of plant and equipment or due to the substances which are under pressure, escaping into the atmosphere.

18. Entry into or work in confined spaces. —

(1) The occupier of every factory to which the provisions of this Schedule apply, shall ensure the observance of the following precautions before permitting any person to enter or work inside the confined spaces. —

(a) To identify all confined spaces and the nature of hazards that are encountered in such spaces, normally or abnormally, and arrange to develop the most appropriate safeguards for the safety and health of persons entering into or working inside, the confined spaces:

(b) To regulate the entry or work inside the confined spaces a 'permit to work system' which shall include the safeguards so developed as required under sub-clause (a) above.

(c) To render the place safe before testing the confined space for entry into or work by washing or cleaning with neutralizing agents: or purging, with steam or inert gases and making adequate forced ventilation arrangements.

(d) To arrange to carry out such tests as are necessary for the purpose by a completent person and ensure that lhe confined space is safe for the persons to enter or work. Such testing shall be carried out as often as is necessary during the course of work to ensure its continued safety,

(e) To arrange to educate and train the personnel who would be required to work in confined spaces about the hazards involved in the work. He shall also keep in readiness the appropriate and approved personal protective equipment including arrangements for rescue, ressurection and first aid, and shall arrange supervision of the work at all limes by a responsible and knowledgeable person.

(2) The manager shall maintain a log book of every entry into or work in, confined spaces and such record shall contain the details of persons assigned for the work, the localion of the work and such other details that would have a bearing on the safety and health of the persons assigned for this work. The log book so maintained shall be retained as long as the concerned workers are in service and produced to the Inspector-cum-Facilitator when demanded.

19. Maintenance work etc.—

(1) All the work connected with the maintenance of plants and equipment including cleaning of empty containers which have held hazardous substances used in the processes covered in this Schedule, shall be carried out under 'permit to work system' employing trained personnel and under the supervision of responsible person, having knowledge of the hazards and precautions required to deal with them.

(2) Maintenance work shall he carried out in such a manner that there is no risk to persons in the vicinity or to persons who pass by. If necessary, the place of such work shall he cordoned off or the presence of unconnected persons effectively controlled.

20. Permit to work system. —

The permit to work system shall inter-alia include the observance of the followilng precautions while carrying out any specified work to be subjected to the permit to work system-

(a) All work subject to the permit to work system shall be carried out under the supervision of a knowledgeable and responsible person;

(b) All parts of plant or machinery or equipment on which permit to work system is carried out. shall remain isolated from other parts throughout the period of permit to work and the place of work including the parts of plant, machinery shall he rendered safe by cleaning, purging, washing, etc.;

(c) All work subject lo the permit to work system shall have pre-determined work procedure which integrate safety with the work. Such procedures shall be reviewed whenever any change occurs in material or equipment so that continued safety is ensured;

(d) Persons who are assigned to carry out the permit to work system shall he physically fit in all respects taking into consideration the demands and nature of the work before entering into the confined space. Such person shall be adequately informed about the correct work procedure as well as the precautions to be observed while carrying out the permit to work system;

(e) Adequate rescue arrangements wherever considered necessary and adequate first aid, rescue and resurrection arrangements shall be available in good working condition near the place of work while carrying out the permit to work system. for use in emergency,

(f) appointed and approved protective equipment shall be used while carrying out the 'permit to work system';

(g) After completion of work subject to the 'permit to work system' the person responsible shall remove all the equipments and tools and restore to the original condition so as to prevent any danger while carrying out regular process.

21. Safety sampling personnel.—

The occupier shall ensure the safety of persons assigned for collecting samples by instructing them on the safe procedures. Such personnel shall be provided with proper and approved personal protective equipment, if required.

22. Ventilation—

Adequate ventilation arangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be evolved. These arrangements shall ensure that concentrations, which are either harmful or could result in explosion, are not permitted to be built up in the work environment.

23. Procedure for meeting emergencies. —

(1) The occupier of every factory carrying out the works covered in the first Schedule of the Act, shall arrange to identify all types of possible emergencies that could occur in the processes during the course of work or while carrying out maintenance work or repair work. The emergencies so identified shall be reviewed yearly;

(2) The occupier shall formulate a detailed plan to meet all such identified emergencies including arrangements for summoning outside help for rescue and fire fighting and arrangements for making available urgent medical facilities.

(3) The occupier shall send the list of emergencies and the details of procedures and plans formulated to meet the emergencies, to the Chief Inspector-cum-Facilitator.

(4) The occupier shall arrange to install distinctive and recognizable warning arrangements to caution all persons inside the plant as well as the neighbouring community, if necessary, to enable evacuation of persons and to enable the observance of emergency procedures by the persons who are assigned emergency duties. All concerned must be well informed about lhe warning arrangements and their meaning. The arrangements must be checked for its effectiveness every month.

(5) Alternate power supply arrangements shall be made and inter-locked with the normal power supply system so as to ensure constant supply of power to the facilities and equipment meant for compliance with requirements of paragraph 10, 11, 12, 13, 14, 18, 22. and this paragraph of Part –II, Part- III, Part -IV and Part-V of this Schedule.

(6) The occupier shall arrange to suspend the further process work in a place where emergency is established and shall forthwith evacuate all persons in that area except workers who have been assigned emergency duties.

(7) All the employees of the factory shall be trained about the action to be taken by them including evacuation procedure during emergencies.

(8) All emergency procedures must be rehearsed every three months and efficiencies, if any. in the achievement of the objectives shall suitably he corrected.

(9) The occupier shall arrange to have ten per cent of the workers trained in the use of First Aid, fire-lighting appliances and in the rendering during the specilic First Aid measures taking into consideration the special hazards of the particular process.

(10) The occupier shall furnish immediately, on request the specific chemical identity of the hazardous substance to be treating physician when the information is needed to administer proper emergency of first-aid treatment to exposed person.

24. Danger due to effluents.

(1) Adequate precautions shall be taken to prevent the mixing of effluents from different processes and operations which may cause dangerous or poisonous gases to be evolved.

(2) Effluents, which contain or give rise in the presence of other effluents to poisonous gases, shall be provided with independent drainage systems to ensure that they may be traced and rendered safe.

PART – III

FIRE AND EXPLOSIONS RISKS

1.

(1) No internal combustion engine and no electric motor or other electrical equipment and fittings and fixtures capable of generating sparks or otherwise causing combustion or any other source of ignition or any naked light shall be installed or permitted to be used in the process area where there could be fire and explosion hazards.

(2) All hot exhaust pipes shall be installed outside a building and other hot pipe or hot surface or surface likely to become hot shall be suitably protected.

(3) The classification of work area in terms of its hazard potential and the selection of electrical equipment or other equipment that could constitute a source of ignition shall be in accordance with respective Indian standard.

(4) Where a flammable atmosphere may be prevalent or could occur, the soles of footwear worn by workers shall have no metal on them. and the wheels of truck or conveyors shall be not conductive type.

(5) All tools and appliances used for work in this area shall be of non-spark in type. Smoking in process area where there are risks of fire and explosion shall be prohibited, and warning notice in the language understood by majority of workers shall be posted in the factory prohibiting smoking into specified areas.

2. Static Electricity—

(1) All machinery and plant, particularly, pipe lines and belt drives, on which static charge is likely to accumulate, shall be effectively earthed. Receptacles for flammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking here necessary, humidity shall be regulated.

(2) Mobile tanker wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge, takes place.

3. Lightning protection.—

Lightning protection arrangement shall be fitted where necessary, and shall be maintained.

4. Process heating.—

The method of providing heat for a process likely to result in fire and explosion shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping flammable gas, vapour, or dust coming into contact with the flame, or exhaust gases, or other sources likely to cause ignition. Wherever possible, the heating arrangement shall be automatically controlled at a pre-determined temperature below the danger temperature.

5. Leakage of flammable liquids.—

(1) Provision shall be made to confine by means of bund walls, dykes, sumps etc. possible leakages from storage vessels containing flammable liquids.

(2) Waste material in contact with flammable substances shall be disposed oil suitably under the supervision of knowledgeable and responsible person.

(3) Adequate and suitable fire-fighting appliances shall be installed in the vicinity of such vessels.

6. Safety valves.—

Every steel and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise above the atmospheric pressure, shall have attached to it a pressure gauge, and a proper safely valve or other equally efficient means to relieve the pressure. These appliances shall he maintained in good condition.

7. Installation of pipe line etc.—

All pipe lines carrying flammable or explosive substances shall be protected from mechanical damage and shall be examined by a responsible person once in a week to detect any deterioration or defects, for accumulation of flammable or explosive substances, and record kept of any defects found and repairs made.

8. Fire-fighting systems.

(1) Every factory employing 500 or more persons and carrying out processes listed in the First Schedule of the Code, shall provide-

(a) Trained and responsible fire-fighting squad so as to effectively handle the fire-fighting and life-saving equipment in the event of fire or other emergency. Number of persons in this squad shall necessarily depend upon the size of risk involved, but in no case shall be less than 8 such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.

(b) Squad leaders shall preferably be trained in a recognized Government institution and their usefulness enhanced by providing residence in the premises.

(c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.

(2) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each such leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.

(3) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all fire fighting equipment in proper working order. Any defect coming to his notice shall be immediately being brought to the notice of squad leader.

(4) As far as is practicable, the fire pump room and the main gate(s) of the factory be connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

PART IV

Risks of Toxic Substances

1. Leakage.

(1) All plants shall be so designed and constructed as to prevent the escape of toxic substance, where necessary, separate building, rooms, or protective structures shall be used for the dangerous stages of the process and the building shall be so designed as to localize and escape of toxic substances.

(2) Catch bund walls, dykes, or other suitable safeguards shall be provided to restrict the serious effects of such leakage. Catch pits shall be placed below joints in pipelines where there is danger involved to maintenance and other workers from such leakage.

2. Drainage

Adequate drainage shall be provided and shall lead to collection tanks specifically provided forthis purpose wherein deleterious material shall be neutralized, treated or otherwise rendered safe before it is discharged into public drains or sewers.

3. Covering of vessels.—

(1) Every Fixed or structure containing any toxic substance and not so covered as lo eliminate all reasonable risk of accidental contact of any portion of' the body of a worker, shall be so constructed as to avoid physical contact.

(2) Such vessel shall, unless its edge is at least 90 centimeters above the adjoining ground or platform, be securely fenced to a height of at least 90 centimeters above such adjoining ground or platform.

(3) Where such vessels adjoin and the space between them, clear of any surrounding brick or other work is either less than 45 centimetres in width or in 45 or more centimetres in width, but is not securely fenced on both to a height of at least 90 centimetres, secure barriers shall be so placed as lo piv\cnl passage between them :

Provided that sub-paragraph (2) of this paragraph shall not apply to—

(a) Saturators used in the manufacture of sulphate of ammonia: and

(b) That part of the sides of brine evaporating pan, which require raking, drawing or filling.

4. Continuous exhaust arrangement.—

(1) Any process evolving toxic vapour, gas fume and substance shall have efficient continuous exhaust draught. Such arrangement shall be interlocked in the process control wherever possible.

(2) In the event of failure of continuous exhaust arrangement means shall be provided to automatically stop the process.

5. Works Bench.—

All the work benches used in processes involving the manipulation of toxic substances shall be graded properly and shall be made of smooth impervious surface which shall he washed daily after the completion of work.

6. Waste disposal.—

(1) There shall be provided a suitable receptacle made of non- absorbable material with a tightly fitting cover for depositing waste material soiled with toxic substances and the contents of such receptacle shall he destroyed by burning or using other suitable method under the supervision of a responsible person.

(2) During the course of manufacture, whenever any batch or intermediate products having toxicity is rejected on considerations of qualily. sufficient prcautions shall he taken to render them innocuous or otherwise treat them or inactive them before disposal.

(3) The empty containers of toxic substances shall be cleaned thoroughly before disposal under the supervision of a resposible persons.

PART V

Special Provisions

1. Special precautions for Nitro or Amino processes.—

(1) Unless the crystallized nitro or amino substances or any of its liquor is broken or agitated in a completely enclosed process so as not to give rise to dust or fume, such process shall be carried on under an efficient exhaust draught or by adopting any other suitable means in such a manner as to prevent the escape of dust or fume into the working atmosphere.

(2) No part of the plant, equipment, or implements, which was in contact with nitro or amino compounds, shall be repaired, or handled unless they have been emptied and thoroughly cleaned and decontaminated.

(3) Filling of containers with nitro or amino compounds shall be done only by using a suitable scope to avoid physical contact and the drying of the containers in the stove shall be done in such a manner that the hot and contaminated air from the stove is not drawn into the work room.

(4) Processes involving the steaming into or around any vessel containing nitro or amino compounds or its raw materials shall be carried out in such a manner that the steam or vapour is effectively prevented to be blown back into the working atmosphere.

(5) Suitable antidotes such as methylene blue injections shall always he available at designated places of work, for use during emergency involving the poisoning with nitro or amino compounds.

2. Special precautions for "chrome processes".—

(1) Grinding and sieving of raw materials in chrome processes shall be carried on in such a manner and under such condition as to secure effectively separation from any other processes and under an efficient exhaust draught.

(2) There shall be washing facilities located very near to places where wet chrome processes such as leaching acidification, sulphate setting, evaporation, crystallisation, centrifugation or packing are carried out, to enable quick washing of affected parts of body with running water.

(3) Weekly inspection of hand and feet of all persons employed in chrome process shall be done by a qualified nurse and record of such inspections shall be maintained in a form approved by the Chief Inspector-cum-Facilitator.

(4) There shall be always available at designated places of work suitable ointment such as glycerine, vaceline, etc. and waterproof plaster in a separated box readily accessible to the workers to protect against perforation of nasal septum.

3. Special precautions for processes carried out in all glass vessels.—

(1) Processes and chemical reactions such as manufacture of binyl chloride, benzyl chloride etc. which are required to be carried out in all glass vessels shall have suitable means like substantial wiremesh covering to protect persons working nearby in the event of breakage of glass vessel.

(2) Any spillage or emission of vapour from the glass vessel due to breakage shall be immediately inactivated or rendered innocuous by suitable means such as dilution with water or suitable solvents so as to avoid the risks of fire or explosion or health hazards.

4. Special precautions for processes involving chlorate manufacture.—

(1) Crystallization, grinding or packing of chlorate shall not be done in a place used for any other purpose and such places shall have hard, smooth and impervious surface made of non-combustible material. The place shall be thoroughly cleaned daily.

(2) The persona] protective equipment like overall, etc. provided for the chlorate workers shall not be taken from the place of work and they shall be thoroughly cleaned daily.

(3) Adequate quantity of water shall be available near the place of process for use during the emergency.

(4) Wooden vessels shall not be used for the crystallization of chlorate or to contain crystallised ground chlorate.

5. Special precaution in use of plant and equipment made from reinforced plastics:

(1) All plant and equipment shall conform to appropriate Indian or any other National Standard.

(2) Care shall be taken during storage, transport, handling and installation of plant and equipments to avoid accidental damage.

(3) All plant and equipment shall be installed in such a way as to ensure that loads are distributed as intended in design or as per the recommendations of the manufacturers.

(4) All pipe-work shall be supported so that total loads of local to the branches on the vessel or tank do not exceed their design values.

(5) After erection, all plant and equipment shall be subjected to a pressure test followed by a thorough examination by a competent person. The test and examination shall be as per relevant standard. A certificate of test and examination by competent person shall be obtained and kept available at site.

(6) All plant and equipment shall be subjected lo periodical tests and examination and record maintained as per paragraph 15 in Part II of this Schedule.

(7) Plant and equipment during their use shall not be subjected to over-filling or over-loading beyond rated capacity.

PART VI

Additional Welfare Amenities

1. Washing facilities.—

(1) There shall be provided and maintained in every factory for the use of all the workers taps for washing at the rate of one tap for every 15 persons including liquid soap in a container with tilting arrangements and nail brushes or other suitable means for effective cleaning. Such facilities shall be conveniently acceessible and shall be kept in a clean and hygienic condition.

(2) If washing facilities as required above are provided for women, such facilities shall be separate for them and adequate privacy at all times shall be ensured in such facilities.

2. Mess-room facilities.—

(1) The occupier of all the factories carrying out processes covered in the First Schedule of the Code and employing 50 workers or more. shall provide for all the workers working in a shift, mess room facilities which are well ventilated and provided with tables and sitting facilities along with the provision of cold and hygienic drinking water facilities.

(2) Such facilities shall include suitable arrangements for cleaning and washing and shall be maintained in a clean and hygienic condition.

3. Clockroom facilities.—

(1) The occupier of every factory carrying out any process covered in the First Schedule of the Code shall provide for all the workers employed in the process, clock room facilities with lockers. Each worker shall he provided with two lockers, one for work clothing and another separately for personal clothing and the lockers shall be such as to enable the keeping of the clothing in a hanging position.

(2) The clock-room facilities so provided in pursuance of sub-Para (1) shall be located as far as possible near to the facilities provided for washing in pursuance of para (1), if it is not possible to locate the washing facilities, the clock room facilities shall have adequate and suitable arrangements for cleaning and washing.

4. Special bathing facilities.—

(1) The occupier of any factory carrying out the process covered under appendix shall provide special bathing facilities for all the workers employed and such facilities shall be provided at the rate of one for 25 workers and part thereof, and shall be maintained in a clean and hygienic condition.

(2) The occupier shall insist all the workers employed in the process covered in appendix to take bath after the completion of the day's or shift or shift work using the bathing facilities so provided and shall effectively prevent such of those workers taking bath in any place other than the bathing facilities.

(3) Notwithstanding anything contained in sub-Para (1) above, the Chief Inspector-cum-Facilitator may require in writing the occupier of any factory carrying out any other process for which in his opinion bathing facilities are essential from the health point of view, to provide special bathing facilitiss.

PART VII

1. Duties of workers.—

(1) Every worker employed in the processes covered in the First Schedule of the Code and Appendix shall not make any safety device or appliance or any guarding or fencing arrangement inoperative or defective and shall report the defective condition of the aforesaid arrangements as soon us he is aware of any such defect.

(2) Before commencing any work, all workers employed in processes covered in the First Schedule of the Code shall check their work place as well as the machinery, equipment or appliances used in the processes and report any mal-function or defect immediately to the supervisor or any responsible person of the management.

(3) All workers shall co-operate in all respects with the management while carrying out any work or any emergency duty assigned to them in pursuance of this Schedule and shall always use all the personal protective equipinents issued to them in a careful manner.

(4) All workers employed in the processes covered in the First Schedule of the Code or appendix shall not smoke in the process area or storage area. If special facilities are provided by the management only such facilities shall be used.

(5) All workers employed in the processes covered in the First Schedule of the Code shall not remain in unauthorised place or carry out unauthorised work or improvise any arrangements or adopt short cut method or misuse any of the facilities provided in pursuance of this Schedule, in such a manner as to cause risk to themselves as well as to others employed.

(6) The workers shall not refuse undergoing medical examination as required under these rules.

PART VIII

(Restrictions on the employment of young persons under 18 years of age and women)

(1) The Chief Inspector-cum-Facilitator may by an order in writing restrict or prohibit the employment of women and young persons under the age of 18, in any of the processes covered in First Schedule of the Code on consideration of health and safety of women and young persons.

(2) Such persons who are restricted or prohibited from working in the process due to the order issued in pursuance of sub-para (I) above shall be piovided with alternate work which is not detrimenlal to their health or safety.

Appendix

(Concerning special bathing accommodation in pursuance olpara 4 of Part VI)

1. Nitro or amino processes.
2. All chrome process.
3. Processes of distilling gas or coal tar or processes of chemical manufacture in which tar is used.
4. Processes involving manufacture, manipulation, handling or recovery of cyanogen compound, cyanide compound, cynate compounds.

5. Processes involving manufacture of bleaching powder or production of chlorine gas in chloro—alkali plants.

6. Manufacture, manipulation or recovery of nickel and its compounds.

All processes involving the manufacture, manipulation or recovery of aliphatic or aromatic compounds or their derivatives or substituted derivatives.

Schedule XXII. Manufacture, Handling and Usage of Benzene and Substances containing Benzene.

1. This Schedule shall apply in respect of factories or parts thereof in which benzene or substances containing benzene are manufactured, handled, stored, packed, or used

2. Definition.-

For the purpose of this Schedule.-

(a) "Substances containing benzene" means substances wherein benzene content exceeds [One] per cent by volume.

(b) "Substitute" means a chemical which is harmless or less harmful than benzene and can be used in place of benzene;

(c) "Enclosed system" means a system which does not allow escape of benzene vapors to the working atmosphere;

(d) "Efficient exhaust draught" means localized ventilation effected by mechanical means for the removal of gases, vapour and dusts or fumes so as to prevent them from escaping into the air of any workroom.

Explanation - No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapour, fumes or dusts originate.

3. [Prohibition and substitution]*:

(a) Benzene or substances containing benzene shall not be used as solvent of diluents unless the process in which it is used is carried on in an enclosed system or unless the process in carried on in a manner which is considered equally safe as if it was carried out in an enclosed system.

(b) Where suitable substitutes are available, they shall be used instead of Benzene or substances containing Benzene. This provision, however, shall not apply to the processes specified in Appendix A.

(c) The Chief Inspector-cum-Facilitator may, subject to confirmation by the State Government permit exemptions from percentage laid down in clause 2(a) and also from the provisions of sub-clause (b) temporarily under conditions and within limits of time to be determined after consultation with employers and workers concerned.

4. Protection against inhalation. -

(a) The process involving the use of benzene or substances containing benzene shall as far as practicable be carried out in an enclosed system.

(b) Where, however, it is not practicable to carry out the process in an enclosed system, the workroom in which benzene substances containing benzene are used shall be equipped with an efficient exhaust draught or other means for the removal of benzene vapour to prevent their escape into the air of the workroom so that the concentration of benzene in the air does not exceed 25 parts per million by volume or 80 mg/m^3.

(c) Air Analysis of or the measurement of concentration of benzene vapour in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector-cum-Facilitator at places where process involving use of benzene is carried and the result of such analysis shall be recorded in a register specially maintain for this purpose. If the concentrations of benzene vapour in air as measures by air analysis exceed 25 parts per million by volume or $80mg/m^3$ the manager shall forthwith report the concentration to the Chief Inspector-cum-Facilitator stating the reasons for such increase.

(d) Workers who for special reasons are likely to be exposed to concentration of benzene in the air of the work room exceeding the maximum referred to in clause (b) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

5. Measures against skin contact. -

(a) Workers who are likely to come in contact with liquid benzene or liquid substance containing benzene shall be provided with suitable gloves, aprons, boots and where necessary vapour tight chemical goggles, made of material not effected by benzene or its vapour.

(b) The protective wear referred to 'in sub-clause (a) shall be maintained in good condition and inspected regularly.

6. Prohibition relating to employment of women and young persons. -

No lactating mother and pregnant women or young person shall be employed or permitted to work in any work room involving exposure to benzene or substance containing benzene.

7. Labelling. -

Every container holding benzene or substances containing benzene shall have a label with the word "Benzene" and approved danger symbols clearly visible on it and shall also display information on benzene content warning about toxicity and warning about in flammability of the chemical.

8. Improper use of benzene. -

(a) The use of benzene or substances containing benzene by workers for cleaning their hands or for any other purposes shall be prohibited.

(b) Workers shall be instructed on the possible dangers arising from such misuse.

9. Prohibition of consuming of food, etc. in work rooms. -

No worker shall be allowed to store or consume food or drink in the work room in which benzene or substances containing benzene are manufactured, stored, packed, handled or used. Smoking and Chewing tobacco or pan shall be prohibited in such work rooms.

10. Instructions regards risks. -

Every worker on his first employment shall be fully instructed on the properties of benzene or substances containing benzene which he has to handle and of the dangers involved. Workers shall also be instructed on the measures to be taken to deal with in an emergency.

11. Cautionary notices. -

Cautionary notices in the form specified in Appendix 'B' presented in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workroom where benzene or substances containing benzene are manufactured, stored, packed, handled or used.

12. Washing facilities, cloak rooms and mess rooms. -

In factories in which benzene or substances containing benzene are manufactured, handled or used the occupier shall provide and maintain in clean state and in good repair: -

(a) Washing facilities under cover of the standard of at least one tap for every 10 persons having constant supply of water with soap and a clean towel provided individually to each worker is so ordered by the Inspector.

(b) A cloak room with lockers for each worker, having two compartments, one for street clothing and one for work clothing;

(c) A mess room furnished with tables and benches with means for warming food, provided that where a canteen or other proper arrangements exist for the workers to take their meals, the requirements of mess room shall be dispensed with.

13. Medical Examination. -

(a) Every worker who is to be employed in processes involving use of benzene or substances containing benzene shall undergo: -

(i) A thorough pre-employment medical examination including a blood test for fitness for employment by certifying surgeon, or by medical officer of a public/Government hospital.

(ii) Periodically medical examination including blood test and other biological tests at intervals of every 6 months by a laboratory.

(b) Certificates of pre-employment medical examination and periodical medical examination including tests, shall be entered in a health register in **Form 42**, which shall be produced on demand by an Inspector.

(c) If the factory medical officer on examination at any time is of the opinion that any worker has developed signs or symptoms of benzene exposure, he shall make a record of his finding in the said register and inform the manager in writing. On receipt of the information from the factory medical officer, the manager of the factory shall send the workers so found exposed, to the certifying surgeon who shall, after satisfying himself, with the finding of the factory medical officer and conducting necessary examinations issue orders of temporary shifting of the worker or suspension of the worker in the process.

(d) The medical examination shall be arranged by the occupier or manager of the factory and the worker so examined shall not bear any expense for it.

14. Prohibition of use of Benzene. –

Use of benzene and substances containing benzene is prohibited in the following processes.

(a) Manufacture of Varnishes, Plants and thinners:

(b) Cleaning and digressing operations

APPENDIX –A

(See Clause 3b)

1. Production of benzene
2. Process where benzene is used for chemical synthesis
3. Motor spirits (used as fuel)

APPENDIX –B

(See Clause 11)

(a) The Hazards.-

(i) Avoid breathing of benzene vapour.

(ii) Prolonged or repeated breathing of benzene vapour may result in acute or chronic poisoning.

(iii) Benzene can also be absorbed through skin which may cause skin and other diseases.

(b) The Preventive Measure to be taken.-

(i) Avoid breathing of benzene vapour.

(ii) Avoid prolonged or repeated contact of benzene with the skin.

(iii) Remove benzene soaked or wet clothing promptly.

(iv) if any time you are exposed to high concentration of benzene vapour and exhibit the sign and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your Factory Manager.

(v) Keep all the containers of benzene closed.

(vi) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor.

(vii) Maintain good housekeeping.

(c) The protective equipment to be used.-

(i) Use respiratory protective equipments in places where benzene vapour are present in high concentration.

(ii) In emergency, use self-generating oxygen mask or oxygen or air cylinder masks.

(iii) Wear hand gloves, aprons, goggles and gum boots to avoid contact with benzene with your skin and body parts.

(d) The first aid measure to be taken in case of acute benzene poisoning.-

(i) Remove the clothing immediately if it is wetted with benzene.

(ii) If liquid benzene enters eyes flush thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.

(iii) In case of unusual exposure to benzene vapour, call a physician immediately, until he arrives, take the following measures:

If the exposed person is conscious

(a) Move him to fresh air in open.

(b) Lay down without a pillow and keep him quiet and warm.

If the exposed person is unconscious

(a) Lay him down preferably on the justify side with the head low.

(b) Remove any false teeth, chewing gum, tobacco or other foreign objects which may be in his mouth-

(c) Provide him artificial respiration in case difficulty is being experienced in breathing.

(d) In case of shallow breathing or cyanosis (blueness of skin lips, ears, finger, nail beds) he should be provided with medical oxygen or oxygen-carbon dioxide mixture. If needed, he should be given artificial respiration. Oxygen shall be administered by a trained person only".

Schedule XXIII. Process of extracting oils and fats from vegetables and animal sources in Solvent extraction plants

1. Definition :-

For the purposes of this Schedule –

(a) "Solvent extraction plant" means a plant in which the process of extracting oils and fats from vegetable and animal sources by use of solvents is carried on.

(b) "Solvent" means a flammable liquid such as pentane, hexane, heptane used for the recovery of vegetable oils;

(c) "Flame Proof enclosure" as applied to electric machinery or apparatus means an "enclosure that will withstand, when covers or other access doors are properly secured, an internal explosion of the flammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communication internal inflammation or explosion the external flammable gas or vapour;

(d) "competent person" for the purpose of this Schedule shall be at least a Member of the Institution of Engineers (India) or an Associate member of the said Institution with 10 years experience in a responsible position as may be approved by the Chief Inspector.

Provided that a graduate in Mechanical engineering or chemical technology with specialized knowledge of oils and fats with a minimum experience of 5 years in a solvent extraction plant shall also be considered to be a competent person:

Provided further that the State Government may accept any other qualifications if in its opinion they are equivalent to the qualification aforesaid.

2. Location and Layout -

(i) No solvent extraction plant shall be permitted to be constructed or extended to within a distance of 30 meters from the nearest residential locality.

(ii) A 1.5 meter high continuous wire-fencing shall be provided around the solvent extraction plant up to a minimum distance of 15 meters from the plant.

(iii) No person shall be allowed to carry any matches or an open flame or fire inside the area bound by the fencing.

(iv) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 meters away from the solvent extraction plant.

(v) If godowns and preparatory processes are at a distance of less than 30 meters from the solvent extraction plant, these shall be at least 15 meters distance away from the plant, and continuous barrier wall of non-combustible material 1.5 meters high shall be erected at a distance of not less than 15 meters from the solvent extraction plant so that it extends to at least 30 meters of vapour travel around its ends from the plant to the possible sources of ignition.

3. Electrical installations –

(1) All electrical motors and wiring and other electrical equipment installed or house in solvent extraction plant shall be of flame-proof construction.

(2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipment not required to be energized shall be properly bonded together and connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

4. Restriction on smoking –

Smoking shall be strictly prohibited within 15 meters distance from solvent extraction plant. For this purpose, "No Smoking" signs shall be permanently displayed in the area.

5. Precautions against friction-

(i) All tools and equipment including ladders, chains and other lifting tackle required to be used in solvent extraction plant shall be of non-sparking type.

(ii) No machinery or equipment in any solvent extraction plant shall be belt driven, unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level,

(iii) No person shall be allowed to enter and work in the solvent extraction plant if wearing clothes made of nylon or such other fiber that can generate static electrical charges, or wearing footwear which is likely to cause sparks by friction.

6. Fire-fighting

(i) Adequate number of portable fire extinguishers, suitable for use against flammable liquid fires shall be provided in the solvent extraction plant.

(ii) An automatic water spray sprinkler system on a wet or open-head deluge system with sufficient supply of storage water shall be provided over solvent extraction plant and throughout the building housing such plant.

7. Precaution against power failure -

Provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically with the power failure.

8. Magnetic separators –

Oil cake shall be fed to the extractor by a conveyer through a hopper and a magnetic separator shall be provided to remove any pieces of iron during its transfer.

9. Venting –

(i) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.

(ii) All emergency relief vents shall terminate at least 6 meters above the ground and be so located that vapours shall not re-enter the building in which solvent extraction plant is located.

10. Waste water –

Process waste water shall be passed through a flash evaporator to remove a solvent before it is discharged into a sump which should be located within the fenced area but not closer than 8 meters to the fence.

11. Ventilation –

The solvent extraction plant shall be well ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for at least six air changes per hour.

12. House keeping –

(i) Solvents shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans.

(ii) Waste materials such as oily rags, other wastes and absorbents used to wipe off solvent and paints and oils shall be deposited in approved containers and removed from the premises at least once a day.

(iii) Space within the solvent extraction plant and within 15 meters from the plant shall be kept from any combustible materials, any spills of oil or solvent, shall be cleaned up immediately.

13. Examination and repairs –

(i) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector-cum-Facilitator with his observation as to whether or not the plant is in safe condition to work.

(ii) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.

(iii) Facility shall be provided for purging the plant with inert gas or steam before opening for cleaning or repairs and before introducing solvent after repairs.

14. Operating personnel –

The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained persons as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.

15. Employment of women and young persons –

No lactating mother and pregnant women or young person shall be employed in the solvent extraction plant.

16. Vapour detection –

A suitable type of flame-proof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routine sampling of atmosphere at various locations as approved by the Chief Inspector-cum-Facilitator shall be drawn out and entered in a register maintained for the purpose.

17. Exemption –

If in respect of any factory, the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reasons, all or any of the provisions of this Schedule is not necessary for the protection of the workers in the factory, the Chief Inspector-cum-Facilitator may be a certificate in writing (which he may in his discretion revoke at any time) exempt such factory from all or any of such provision subject to conditions, if any, as he may specify therein.

Schedule XXIV. Manufacturing process or operations in Carbon Disulphide plants

1. Application -

This Schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide after generation is, condensed, refined and stored. This Schedule is in addition to and not in derogation of any of the provisions of the Code and rules made there under.

2. Construction, installation and operation –

(1) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregated from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant layout shall be such that only a minimum number of workers are exposed to the risk of any fire or explosion at any one time.

(2) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored with all their fittings and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected to and shall be designed that carbon disulphide liquid and gas are in closed system during their normal working.

(3) The electric furnace supports shall be firmly grounded about 60 centimetres in concrete or by other effective means.

(4) Every electric furnace shall be installed and operated according to manufacturer's instructions and these instructions shall be clearly imparted to the personnel in charge of construction and operation.

(5) The instruction regarding observance of correct furnace temperature, sulphur does, admissible current or power consumption and periodical checking of charcoal level shall be strictly complied with.

3. Electrodes-

(1) Where upper ring electrodes made of steel are used in the electric furnace, they shall be of seamless tube construction and shall have arrangement for being connected to cooling water system through a siphon built in the electrodes or through a positive pressure water-pump.

(2) The arrangement for cooling water referred to in sub-paragraph (1) shall be connected with automatic alarm system which shall actuate in the event of interruption of cooling water in the electrodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

4. Maintenance of charcoal level –

When any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

5. Charcoal separator-

A cyclone type of charcoal separator shall be fitted on the off-take pipe between the electric furnace and sulphur separator to prevent entry of pieces of charcoal into the condensers and piping.

6. Rupture discs and safety seal –

(1) At least two rupture discs of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top of the furnace or each through an independent pipe as close as possible to the furnace.

(2) A safety water seal shall be provided and tapped from a point between the charcoal separator and the sulphur separator.

7. Pyrometer and manometers –

(1) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for reading the temperatures shall be located in the control room.

(2) Manometers or any other suitable devices shall be provided for indicating pressure –

(a) in the off-take pipe before and after the sulphur separator; and

(b) In primary and secondary condensers.

8. Check valves –

All piping carrying carbon disulphide shall be fitted with check valves at suitable positions so as to prevent gas from flowing back into any electric furnace in the event of its shutdown.

9. Inspection and maintenance of electric furnaces –

(1) Every electric furnace shall be inspected internally by a competent person-

(a) Before being placed in service after installation.

(b) before being placed in service after reconstruction or repairs ; and

(c) Periodically every time the furnace is opened for cleaning or de-ashing or for replacing electrodes.

(2) When an electric furnace is shut down for cleaning or de-ashing-

(a) the brick lining shall be checked for continuity and any part found defective shall be removed;

(b) after the removal of any part of the lining referred to in (a) the condition of the shell shall be closely inspected; and

(c) Any plates forming shell found corroded to the extent that safety of the furnace is endangered shall be replaced.

10. Maintenance of records –

The following hourly records shall be maintained in a logbook:

(a) manometer readings at the points specified in sub-paragraph 7(2) ;

(b) gas temperature indicated by pyrometers and all other vital points near the sulphur separator and primary and secondary condensers;

(c) water temperature and flow of water through the siphon in the electrodes; and

(d) Primary and secondary voltages and current and energy consumed.

11. Electrical apparatus, wiring and fittings.-

All building in which carbon disulphide is refined or stored shall be provided with electrical apparatus, writing and fittings which shall afford adequate protection from fire and explosion.

12. Prohibition relating to smoking.-

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in buildings in which carbon disulphide is refined or stored, and a notice in the language understood by a majority of the workers shall be posted in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

13. Means of escape.-

Adequate means of escape shall be provided and maintained to enable persons to move to a safe place as quickly as possible in case of an emergency. At least two independent staircases of adequate width shall be provided in every building housing the furnace at reasonable intervals at opposite ends. These shall always be kept clear of all obstructions and so designed as to afford easy passage.

14. Warning in case of fire.-

There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and in case of failure of electricity by some mechanical means.

15. Fire-fighting equipment.-

(1) Adequate number of suitable fire extinguishers or other fire fighting-equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of materials stored.

(2) Clear instruction as to how the extinguishers or other equipment shall be used printed in the language which the majority of the workers employed understand, shall be affixed to each extinguisher or other equipment and the personnel trained in their use.

16. Bulk.-

(3) Open or semi-enclosed spaces for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearby locomotives etc. and precautions shall be taken to see that flames, smoking and matches and other sources of ignition do not come into contact with the clouds of dust arising during handling of bulk sulphur.

(4) All enclosures for bulk sulphur shall be of non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.

(5) The bulk sulphur in the enclosures shall be handled in such a manner as to minimize the formation of dust clouds and no flame, smoking and matches or other sources of ignition shall be employed during handling and non-sparking tools shall be used whenever sulphur is shoveled or other wise removed by hand.

(6) No repairs involving flames, heat or use of hand or power tools shall be made in the enclosure where bulk sulphur is stored.

17. Liquid Sulphur.-

Open flames, electric sparks and other sources of ignition, including smoking and matches, shall be excluded from the vicinity of molten sulphur.

18. Training and supervision,-

(1) All electric furnaces and all plants in which carbon sulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plant are in operation.

(2) Workers in charge of operation and maintenance of electric furnaces and the plants shall be properly qualified and adequately trained.

19. Washing facilities.-

(1) The occupier shall provide and maintain, in a clean state and in good repair, for the use of all persons employed, a washing place under cover with at least one tape or stand-pipe, having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less than 120 centimetres apart with a sufficient supply of soap and clean towels, provided that towel shall be supplied individually to each worker if so ordered by the Inspector.

(2) All the workers employed in the sulphur storage and melting operations shall be provided with a nail brush.

20. Personal protective equipment.-

(1) Suitable goggles and protective clothing consisting of overalls (without pockets); gloves and foot wear shall be provided for the use of operatives–

(a) When operating valves or cocks controlling fluids etc.,

(b) Drawing off of molten sulphur from sulphur pots ; and

(c) Hardening charcoal or sulphur.

(2) Suitable respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(3) Arrangements shall be made for proper and efficient cleaning of all such protective equipment's.

21. Cloak rooms.-

There shall be provided and maintained for the use of all persons employed in the processes, a suitable cloak room for clothing put off during work hours and a suitable place separate from the cloak room for the storage or overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person and shall be kept clean.

22. Unauthorized persons.-

Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorized persons shall be admitted into the plant.

Schedule XXV. Operations involving High Noise levels

Part – A High Noise Levels:

1. **Application -** This part of the Schedule shall apply to all operations in any manufacturing process having high noise level.

2. **Definitions** - For the purpose of this Schedule -

   (a) "Noise" means any unwanted sound.

   (b) "High noise level" means any noise level measured on the A-weighted scale is 85 dB or above.

   (c) "Decibel" means one-tenth of "Bel" which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of "Bels" denoting such a ratio being the logarithm to the base of 10 of this ratio. The noise level (or the sound pressure level) corresponds to a reference pressure of 20 x 10 Newton per square meter or 0.0002 dynes per square centimetre which is the threshold of hearing, that is, the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviated form is dB.

   (d) "Frequency" is the rate of pressure variations expressed in cycles per second or hertz.

   (e) "dBA" refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response.

   (f) "A-weighting" means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.

3. Protection against noise –

(1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable, that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

Table – 1

Permissible exposure in cases of continuous noise

Total time of exposure (continuous short term exposures)	Sound pressure level in or a number of dBA per day, in hours
8	85
6	87
4	90
3	92
2	95
1 ½	97
1	100
¾	102
½	105
¼	110

Notes :

1. No exposure in excess of 110 dBA is to be permitted.

2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

Table 2

Permissible exposure levels of impulsive or impact noise

Peak sound pressure level in dB	Permitted number of impulses or impact per day
140	100
135	315
130	1000
125	3160
120	10000

Notes:

1. No exposure in excess of 140 dB peak sound pressure level is permitted.

2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.

(2) For the purposes of this Schedule, if the variations in the noise level involve maximum at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.

(3) When the daily exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions

$\frac{C1}{T1} + \frac{C2}{T2} + \ldots\ldots\ldots\ldots \frac{Cn}{Tn}$ exceeds unity, -

Where the C1, C2 etc. indicate the total time of actual exposure at a specified noise level and T1, T2, etc. denote the time of exposure of less than 90 dBA may be ignored in the above calculation.

(4) Where it is not possible to reduce the noise exposure to the levels specified in sub-clause (1) by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, and each worker so exposed shall be provided with suitable ear protectors as per relevant National or International Standards so as to reduce the exposure to noise to the levels specified in sub-clause 3(1).

The Occupier shall provide personal hearing protectors to the workers.

(a) so as to eliminate the risk to hearing or to reduce the risk to as low a level as is reasonably practicable.

(b) after consultation with the employees concerned or their representative.

(c) ensure the hearing protectors is full and properly fitted, periodically checked for the effectiveness, used and maintained in good working order and repair

(d) ensure that workers are given periodical training in the use, care and maintenance of the Personal hearting protectors.

(5) Where the ear protectors provided in accordance with sub-paragraph 3(4) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table 1 or Table 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

(6) (a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-clause (1) shall be subjected to any auditory examination by a Certifying Surgeon within 14 days of his first employment and thereafter, shall be re-examined at least once in every 12 months. Such initial and periodical examinations shall include tests which the Certifying Surgeon may consider appropriate and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

Part – B High Vibration Levels:

(1) Applications:

This part of the Schedule shall apply to all operations in a manufacturing part of the process having high undesired vibrations.

(2) Definition:

(a) "daily exposure" means the quantity of mechanical vibration to which a worker is exposed during a working day, which takes account of the magnitude and duration of the vibration;

(b) "vibration" means a mechanical phenomenon where by oscillations occur about equilibrium point. The oscillations may be periodic or random.

(c) "high vibration" means any exposure greater than the exposure limit value and action value specified in clause -3.

(d) "exposure action value" means the level of daily exposure set out in clause-3 for any worker which, if reached or exceeded, requires specified action to be taken to reduce risk;

(e) "exposure limit value" means the level of daily exposure for any worker which must not be exceeded, as specified in sub clause -3.

(f) "had-arm vibration" means mechanical vibration which is transmitted into the hands and arms during a work activity;

(g) "mechanical vibration" means a vibration occurring in a piece of machinery or equipment or in a vehicle as a result of its operation; and

(h) "whole-body vibration" means mechanical vibration which is transmitted into the body, when seated or standing, through the supporting surface, during a work activity or as described in sub clause 3(2).

(3) Exposure limit values and action values

(1) For hand-arm vibration_

(a) the daily exposure limit value is 5 m/s2A(8);

(b) the daily exposure action value is 2.5 m/s2A(8),

and daily exposure shall be ascertained on the basis set out in the relevant National / International Standards specified in table 1 below.

(2) For whole body vibration_

(a) the daily exposure limit value is 1.15 m/s2A(8);

(b) the daily exposure action value is 0.5 m/s2A(8),

and daily exposure shall be ascertained on the basis set out in the relevant National / International Standards

Table – 1

The Threshold Limit Values (TLVs) for exposure of the hand to vibration in X, Y or Z direction of axes in the three dimensional system shall be as given below:

Total Daily Exposure Duration (hours)	Maximum value of frequency weighted acceleration (m/s2) in any direction
4 to less than 8 hours	4
2 to less than 4 hours	6
1 to less than 2 hours	8
less than 1 hour	12

(3) (2) Assessment of vibration exposure shall be made for each applicable direction (X, Y, Z) since vibration is a vector quantity (magnitude and direction). In each direction the magnitude of the vibration during normal operation of the power tool, machine or work piece should be expressed by the root-mean-square (RMS) value of the frequency –weighted component acceleration, in units of meter per second squared (m/s2)

(4) Assessment of risk to health due to vibration at the work place

(a) An occupier who carries our work which is liable to expose any worker from vibration shall make a suitable and sufficient assessment of the risk created by that work to health and safety of those and the risk assessment shall identify the control measures that need to be taken.

(b) The risk assessment should be reviewed whenever it is felt the changes in the process makes the earlier risk assessment no longer valid.

(5) Engineering control measures

(1) The occupier shall ensure that risk from the exposure of workers to vibration is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable.

(2) Where it is not reasonably practicable to eliminate risk at source pursuant to paragraph (a) and an exposure action value is likely to be reached or exceeded, the employer shall reduce exposure to as low a level as is reasonably practicable by establishing and implementing a programme of engineering control measures which are appropriate to this type of activity.

(3) The occupier shall ensure that the workers are provided with the following measures.

(a) work equipment of appropriate ergonomic design which, taking account of the work to be done, produces the least possible vibration;

(b) the provision of auxiliary equipment which reduces the risk of injuries caused by vibration; and install appropriate maintenance programmes for work equipment, the workplace and workplace systems;

(4) Subject to sub clause 5, the employer shall ensure that his employees are not exposed to vibration above an exposure limit value; and shall take necessary actions to identify the reasons for the limit being exceeded and take appropriate steps to reduce the exposure to vibration to below limit value.

Provided that where the exposure of an employee to vibration is usually below the exposure action value but varies markedly from time to time and may occasionally exceed the exposure limit value.

Further provided that_ any exposure to vibration averaged over one week is less than the exposure limit value and there is evidence to show that the risk from the actual pattern of exposure is less than the corresponding risk from constant exposure at the exposure limit value; and that the (b) risk is reduced to as low a level as is reasonably practicable, taking into account the special circumstances.

(6) Medical Examination

(1) The occupier shall ensure that the workers who are likely to be exposed to vibration at above exposure action value are subjected to periodical medical examination once in a year. The medical examination shall include general and physical examination as well as special test for Reynaud’s phenomenon.

(2) The health record of workers shall be maintained by the occupier for a period of 5 years from the date of last test and produce to the Inspector-cum-Facilitator of Factories on demand.

(3) If at any time the certifying Surgeon / Factory Medical Officer is of the opinion that the worker is no longer fit to work in the said process on the ground that continuance daring would involve danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.

(7) Personal Protective Equipment

(1) The occupier shall ensure that the workers who are likely to be exposed to high level of vibration are provided with appropriate PPE and protective clothing confirming to national or international standards. Such Personal Protective Equipment should include hand gloves and safety shoes. The protective clothing shall be able to protect the workers from cold and dump.

(2) The occupier shall ensure that workers are given periodical training in the use, care and maintenance of the Personal Protective Equipment.

(8) Administrative Control Measures

(1) The occupier shall ensure that as far as reasonably practicable as all necessary control measures are taken to ensure that the unwanted vibrations does not affect the health of the workers employed in the process to which this part of Schedule apply.

(2) The occupier shall provide all workers with information, instruction and training to be adopted to limit the exposure limit values and action values as set out in sub clause-3.

(3) Without prejudice to the generality of paragraph (1), the information, instruction and training provided under the paragraph shall include_

(i) The exposure limit values and action values set out in sub clause -3.

(ii) safe working practices to minimize exposure to vibration; and

(iii) suitable and sufficient information and training for employees, such that work equipment may be used correctly and safely, in order to minimize their exposure to vibration;

(iv) limitation of the duration and magnitude of exposure to vibration;

(v) appropriate work schedules with adequate rest periods; and

(vi) The information, instruction and training required by paragraph (2) shall be updated to take account of significant changes in the type of work carried out or the working methods used by the employer.

(4) The Occupier shall display pictorial cautionary notices / warning signs at conspicuous places where there are possibilities of workers being exposed to undesired high vibrations.

(9) Prohibition in employment of women, young persons and persons with disabilities.

No women or young person or persons with disabilities shall be employed in the process covered by this part of the Schedule.

Exemptions: If in respect of any factory, the Chief Inspector-cum-Facilitator is satisfied that owing to any exceptional circumstances, or infrequently of the process, or for any other reason, application of all or any of the provisions of this Schedule is not necessary for the protection of the persons employed in such factory, he may by an order in writing which he may at his discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said matter.

Schedule XXVI. Welding/cutting Operation with the use of LPG/Acetylene/Argon

1. Applicability. -

This Schedule is applicable to all operations in welding/cutting of material with the use of liquefied petroleum gas or acetylene gas or argon etc. in conjunction with oxygen gas.

2. Equipment. -

1. Gas cylinder whether filled or empty shall not be stored in room where welding and cutting work is being done.
2. Liquefied gas cylinder, when in use shall always be kept in an upright position and shall be so placed that they can not be knocked over.
3. Open flames, lights, lighting of fire and smoking shall be prohibited in close proximity to any cylinder containing flammable gases, except those which are in use for welding, cutting or heating.
4. All cylinders shall be stored at a safe distance of not less than 10 meters from all operations which produce, flames, sparks or molten metal or results in an excessive heat.
5. Every gas cylinder shall be provided with efficient standard type pressure regulator and back flow of gas will be restricted by second non-return type valve.
6. All welding / cutting torch shall be of standard type which should be provided with non-return valve.
7. Suitable type of the fire extinguishers shall be provided near the welding / cutting place and also near the gas cylinder storage.
8. Pipelines from gas cylinders shall be painted with distinctive colours for identification of each gas.

3.

1. Welding and cutting operation shall be prohibited in areas containing explosive or flammable dusts, gases oil or vapours.
2. Welding / cutting operations that are carried out in places where persons other than the welders and their helpers are working or passing shall be enclosed by means of suitable stationary or portable screens at least 2.15 meters (7 ft) in height.
3. All equipment like welding / cutting torch, pipe lines, brackets, non-return valves and pressure regulators shall be examined by a competent person having know-how of such equipment, at least once in a period of 15 days.
4. The welding / cutting process shall be carried out by workers specially trained in that job and know of the hazards of fire, backfire and explosion.

   A logbook of examination of equipment and a register of trained workers for welding / cutting operation shall be maintained in the forms as directed by the Inspectors.

Schedule XXVII. Manufacture of pottery

1. Application.-

These provisions shall apply to all factories engaged in manufacture of pottery except a factory in which any of the following articles are made:

(a) Unglazed or salt-glazed bricks and tiles; and

(b) Architectural terra-cotta made from plastic clay and either unglazed or glazed with a leadless glaze only.

2. Definitions.-

For the purpose of this Schedule-

(a) “pottery” includes earthenware, stoneware, porcelain, china clay, and any other articles made from such clay or from a mixture containing clay and other materials such as quartz, flint, felspar, and gypsum;

(b) "Efficient exhaust draught" means localized ventilation effected by mechanical or other means for removal of dust or fume so as to prevent it from escaping into air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;

(c) "fetting" includes scalloping, lowing, sand papering, sand sticking, brushing or any other process of cleaning of pottery ware in which dust is given off;

(d) "leadless glaze" means a glaze which does not contain more than one per cent of its dry weight of lead compound calculated as lead monoxide ;

(e) "low solubility glaze" means a glaze which does not yield to dilute hydrochloric acid more than five per cent of its dry weight of a soluble lead compound calculated as lead monoxide when determined in the manner described below :

A weighed quantity of the material which has been dried at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature, with 1000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride, This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighted as lead sulphate;

(f) "ground or powdered flint or quartz" does not include natural sands; and

(g) "Potter's shop" includes all places where pottery is formed by pressing or by any other process and all places where shaping, fettling or other treatment of pottery articles prior to placing for the biscuit fire is carried on.

3. Efficient exhaust draught.-

The following processes shall not be carried on without the use of an efficient exhaust draught:

(a) all processes involving the manipulation or use of a dry and unfritted lead compound ;

(b) fettling operations of any kind, whether on green ware or biscuit, provided that this shall not apply to the wet fettling, and to the occasional finishing of pottery articles without the aid of mechanical power ;

(c) shifting of clay dust or any other material of making tiles or other articles by pressure, except where-

(i) This is done in a machine so enclosed as to effectually prevent the escape of dust; or

(ii) The material to be shifted is so damp that no dust can be given off;

(d) pressing of tiles from clay dust, an exhaust opening being connected with each press, and pressing from clay dust of articles other than tiles unless the material is so damp that no dust is given off ;

(e) fettling of tiles made from clay dust by pressure, except where the fettling is done wholly on, or with damp material and fettling of other articles made from clay dust, unless the material is so damp that no dust is given off ;

(f) process of loading and unloading of saggars where handling and manipulation of ground and powdered fint, quartz, alumina or other materials are involved ;

(g) brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector-cum-Facilitator of Factories as adequate having regard to all the circumstances of the case.

(h) Fettling of biscuit ware which has been fired in powered lint or quartz except where this is done in machines so enclosed as to effectually prevent the escape of dust or is so damp that no dust can be given off;

(i) Where cleaning after the application of glaze by dipping or other process;

(j) Crushing and dry grinding of materials for pottery bodies and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off;

(k) Sieving or manipulation of powdered fling, quartz clay greg or mixture of those materials unless it is so damp that no dust can be given off ;

(l) Grinding of tile on a power-driven wheel unless an efficient water spray is used on that wheel ;

(m) Lifting and conveying of materials by elevators and conveyers unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near to any place in which persons are employed ;

(n) Preparation of weighing out of flow material, lawning of dry colours, colour dusting and colour blowing ;

(o) Mould making unless the bins or similar receptacles used for holding plaster of parts are provided with suitable covers; and

(p) Manipulation of calcined material unless the material has been made and remain so wet that no dust is given off,

4. Separation of process.-

Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from other wet processes:

(a) Crushing and dry grinding or sieving of materials, fetting, pressing of tiles, drying of clay and green ware, loading and unloading of saggars; and

(b) All processes involving the use of dry lead compound.

5. Prohibition on use of glaze.-

No glaze which is not a lead less glaze or a low solubility glaze shall be used in a factory in which pottery is manufactured.

6. Prohibition relating to women and young persons-

No lactating mother and pregnant women or young person shall be employed or permitted to work in any of the operations specified in paragraph 4, or at any place where such operations are carried on.

7. Provision of screen to potter's wheel.-

The potter's wheel (Jolly and Jigger) shall be provided with screens of so constructed as to prevent clay scrapings being thrown off beyond the wheel.

8. Control of dust during cleaning.-

(1) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.

(2) Damp saw-dust or other suitable material shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.

9. Floor of certain workroom.-

The floor of potter's shops, slip houses, dipping house, and ware-cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by an adult male using a moist method.

10. Protective equipment.-

(i) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in process included under paragraph 3.

(ii) The occupier shall provide and maintain suitable aprons of a water-proof or similar material, which can be sponged daily, for the use of a dippers, dippers assistants, throwers, jolly workers, caster, mould maker and filter press and pug mill workers.

(iii) Aprons provided in pursuance of paragraph 10(2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and head-covering shall be washed, cleaned and mended at least once a week, and this washing, cleaning or mending shall be provided for, by the occupier.

(iv) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and charging of ball-mills and plungers without wearing a suitable and efficient dust respirator.

11. Washing facilities.-

The occupier shall provide and maintain in a clean state and in good repair for the use of all persons employed in any of the processes specified in paragraph 3-

(a) a wash-place under cover with either

(i) A trough with smooth impervious surface fitted with a waste-pipe without plug, and of sufficient length to allow at least 60 centimetres for every five such persons employed at any one time and having a constant supply of clean water from tapes or jets above the through at intervals of not more than 60 centimetres; or

(ii) at least one tap or stand-pipe for every five such persons employed at any one time and having a constant supply of clean water, the tap or stand-pipe being spaced not less than 120 centimetres apart; and

(b) A sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

12. Time allowed for washing.-

Before each meal and before the end of the day's work time shall be allowed for washing to each person employed in any of the processes mentioned in paragraph 3.

13. Mess room.-

(1) There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable mess room providing accommodation of 0.93 square per head and furnished with-

(a) A sufficient number of tables and chairs or benches with back rest;

(b) Arrangements for washing utensils;

(c) Adequate means for warming food; and

(d) Adequate quantity of drinking water.

(2) The room shall be adequately ventilated by the circulation of fresh air and placed under the charge of responsible person and shall be kept clean.

14. Food, Drinks, etc. prohibited in workrooms.-

No food, drink, pan and supari or tobacco shall be brought into, or consumed by any worker in any workroom in which any of the processes mentioned in paragraph 3 are carried on and no person shall remain in any such room during intervals for meals or rest.

15. Cloakroom etc.-

There shall be provided and maintained for the use of all persons employed in any of the processes maintained in paragraph 3.

(a) a clock room for clothing put off dur33ing working hours and such accommodation shall be separate from any mess room; and

(b) Separate and suitable arrangements for the storage of protective equipment are provided under paragraph 10.

16. Medical examination.-

(1) All persons employed in any process included under paragraph 3 shall be examined by the Medical Officer (Certifying Surgeon) within 7 days preceding or following the date of their first employment in such process; thereafter all persons employed in any process included under sub-paragraph 3(a) and (n) shall be examined by the Medical Officer (Certifying Surgeon) once in every three calendar months and those employed in any process included in sub-paragraph 3(b) to (m) and (o) and (p) of paragraph 3 once in every twelve months by the Certifying Surgeon. Records of such examination shall be entered by the Medical Officer (Certifying Surgeon) in the Health register in **Form 42** and certificate of fitness granted in **Form 24** to him under paragraph 17.

(2) If any time Medical Officer (Certifying Surgeon) is of the opinion that any person employed in any process included in the paragraph 3 is no longer fit for employment on the ground that continuance therein would involve damage to his health, he shall cancel the certificate of fitness granted to that person.

(3) No person whose certificate of fitness has been cancelled shall be re-employed unless the Certifying Surgeon after examination again certified him to be fit for employment.

17. Certificate of fitness. -

A person medically examined under paragraph 16 and found fit for employment shall be granted, by the Medical Officer (Certifying Surgeon), a certificate of fitness in **Form 24** and such certificate shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector-cum-Facilitator and the person granted such a certificate shall carry it with him while at work undertaken giving reference to such certificate.

Schedule XXVIII. Operations in Foundries

1. Application.-

Provisions of this Schedule shall apply to all parts of factories where any of the following operations or processes are carried on:

(a) the production of iron casting or, as the case may be, steel casting by castings in moulds made of sand, loam, moulding composition or other mixture of materials or by shall moulding, or by centrifugal casting and any process incidental to such production ;

(b) the production of non-ferrous casting metal in moulds made of sand, loam, metal, moulding, composition of other material or mixture of materials, or by shall moulding, die-casting (including pressure die-casting) centrifugal casting or continuous casting and any process incidental to such production, and

(c) the melting and casting of non-ferrous metal for the production of ingots, billets, slabs or other similar products and the stripping thereof :

But shall not apply with respect to-

(a) any process with respect to the melting and manufacture of lead and the Electric Accumulators ;

(b) any process for the purpose of a printing works; or

(c) any smelting process, in which metal is obtained by a reducing operating incidental to such operations; or

(d) the production of steel in the form of ingots; or

(e) any process in the course of the manufacture or solder or any process incidental to such manufacture; or

The melting and casting of lead or any lead-based alloy for the production of ingots, billets slabs or other similar products or the stripping thereof, or any process incidental to such melting casting or stripping.

2. Definitions - For the purpose of this Schedule -

(a) “Approved respirator” means a respirator of a type approved by the Chief Inspector-cum-Facilitator.

(b) “cupola or furnace including a receiver associated therewith:

(c) “dressing or fettling operator” includes stripping and other removal of adherent sand, cores, runners, risers, flash and other surplus metal from a casting and the production or reasonably clean and smooth surface but does not include

(a) the removal of metal from a casting when performed incidentally in connection with the machining or assembling of casting after they have been dressed or fettled or

(b) any operation which is knock-out operation within the meaning of this Schedule ;

(d) "foundry" means those parts of a factory in which the production of iron or steel or non-ferrous casting (not being the production of pig-iron or the productions of steel in the form of ingots) carried on by casting in moulds made of sand, loam, moulding, composition or other mixture of materials, or by shall moulding or any centrifugal casting in metal moulds lined with sand, or die-casting including pressure die-casting together with any part of the factory in which any of the following processes are carried on an incidental processes in connection with any such production namely, the preparation and mixing of materials used in foundry process, the preparation of moulds and cores knockout operations and dressing or fettling operations;

(e) "Knock-out operation" means all methods of removing castings from moulds and the following operations, when done in connection therewith namely, stripping, coring-out and the removal of runners and risers ;

"Pouring aisle" means an aisle leading from a main gangway or directly from a cupola or furnace to where metal is poured into moulds

3. Prohibition of use of certain materials as parting materials.-

1) A material shall not be used as a printing material, if it is a material containing compounds of silicon calculated as silica to the extent more than 5 per cent by weight of the dry material;

Provided that this prohibition shall not prevent the following being used as parting if the material does not contain an admixture of any other silica.

a) Zirconium silicate (Zircon)

b) Calcined china clay

c) Calcined aluminous fireclay

d) Sillimanite

e) Calcined or fused alumina

f) Clivine

g) Natural sand

(2) Dust or other matter deposited from a fettling or blasting process shall not be used as a parting material or as a constituent in a parting material.

4. Arrangement and storage.-

For the purpose of promoting safety and cleanliness in workrooms the following requirements shall be observed:

(a) Moulding boxes, loam plates, ladles, patterns, plates, frames, boards box weight and other heavy articles shall be so arranged and placed as to enable work to be carried on without unnecessary risk ;

(b) Suitable and conveniently accessible racks, bins or other receptacles shall be provided and used for the storage of other gear and tools ;

(c) Where there is bulk storage of sand, fuel, metal scrap or other materials residues, suitable bins, bunkers or other receptacles shall be provided for the purpose of such storage.

5. Construction of floors.-

(1) Floor of indoor work places in which the processes are carried on, other than parts which are of sand, shall have an even surface of hard material.

(2) No part of the floor or any such indoor workplace shall be of sand except where this is necessary by reason of the work done.

(3) All parts of the surface of the floor of any such indoor workplace which are of sand shall so far as practicable be maintained in an even and firm condition.

6. Cleanliness of indoor workplaces-

1. All accessible parts of the walls of every indoor workplace in which the processes are carried on and everything affixed to these walls shall be effectively cleaned by a suitable method to a height of not less than 4.2 meters from the floor at least once in every period of fourteen months. A record of the carrying out of

every such effective cleaning in pursuance of this paragraph including the date (which shall be not less than five months and more than nine months after the last immediately preceding washing, cleaning or other treatment) shall be maintained.

2. Effective cleaning by a suitable method shall be carried out at least once every working day of all accessible parts of the floor of every indoor workplace in which the processes are carried on, other than parts which are of sand : and the parts which are of sand be kept in good order.

7. Manual operations involving molten metal-

1. There shall be provided and maintained for all persons employed on manual operations involving molten metal with which they are liable to be splashed, a working space for the operation.-

   (a) Which is adequate for the safe performance of the work, and

   (b) Which so far as reasonably practicable is kept free from obstruction;

2. Any operation involving the carrying by hand of a container holding molten shall be performed on a floor all parts of which where any person walks while engaged in the operations shall be on the same level;

Provided that, where necessary to enable the operation to be performed without undue risk, nothing in this paragraph shall prevent the occasional or exceptional use of a working space on a different level from the floor, being a space provided with a safe means of access from the floor for any person while engaged in the operation.

8. Gangways and pouring aisles.-

1. In every workroom, to which this paragraph applies, constructed, reconstructed or converted for use as such after coming into force of these rules and so, so far as reasonably practicable, in every other workroom to which this paragraph applies, sufficient and clear main gangways shall be provided and properly maintained which-

   (a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand then is necessary to avoid risk of flying metal from accidental spillage,

   (b) shall be kept, so far as reasonably practicable, free from obstruction ;

   (c) if not used for carrying molten metal, shall be at least 920 millimetres in width ;

   (d) if used for carrying molten metal shall be –

      (i) Where truck ladles are used exclusively, at least 600 millimetres wider than the overall width of the ladle;

      (ii) Where hand, shanks are carried by not more than two men, at least 920 millimetres in width;

      (iii) Where hand shanks are carried by more than two men, at least 1.2 meters in width and

      (iv) Where used for simultaneous travel in both directions by men carrying hand shanks, at least 1.8 meters in width.

2. In workroom (to which this paragraph applies) constructed, reconstructed or converted for use as such, after coming into force of these rules, sufficient and clearly defined pouring aisles shall be provided and properly maintained which-

   (i) shall have an even surface of hand material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;

   (ii) shall be kept as far as reasonably practicable free from obstruction;

   (iii) if molten metal is carried in hand ladles or bull ladles by not more than two men per ladle, shall be at least 460 millimetres wide, but where any moulds alongside the aisles are more than 510 millimetres above the floor of the aisle, the aisle shall be not less than 600 millimetres wide ;

   (iv) if molten metal is carried in hand-ladies or bull-ladies by more than two men per ladle shall be at least 760 millimetres wide ;

   (v) If molten metal is carried in crane, trolley of truck ladles, shall be of a width adequate for the safe performance of the work.

3. Provisions of sub-paragraph (1) and (2), shall not apply to any workroom or part of a workroom if, by reason of the nature of the work done therein, the floor of that workroom or as the case may be, that part of a workroom has to be of sand.

4. In this paragraph, "workroom to which this paragraph applies" means a part of a ferrous or non-ferrous foundry in which molten metal is transported or used, and a workroom to which this paragraph applied shall be deemed for the purpose of this paragraph to have been constructed, reconstructed or converted for use as such after the making of this Schedule if the construction, reconstruction or conversion thereof was begun after the coming into force of these rules.

9. Work near cupolas and furnaces-

No person shall carry out any work within a distance of 4 meters from a vertical line passing through the delivery end of any spout of a cupola or furnace being a spout used for delivering molten metal, or within a distance of 2.4 meters from a vertical line passing through the nearest part of any ladle which is in position at the end of such a spout except, in either case, where it is necessary for the proper use of maintenance of a cupola or furnace that work should be carried out within that distance or that work is being carried out at such a time and under such conditions that there is no danger to the person carrying it out from molten metal which is being obtained from the cupola or furnace or is in a ladle in position at the end of the spout.

10. Dust and fumes-

1. Open coal, coke or wood fires shall not be used for heating or drying ladles inside a workroom unless adequate measures are taken to prevent, so far as practicable fumes or other impurities from entering into or remaining in the atmosphere of the workroom.

2. No open coal, coke or wood fires shall be used for drying moulds except in circumstances in which the use of such fires is unavoidable.

3. Mould stoves, core stove and annealing furnaces shall be so designed, constructed, maintained and work as to prevent, so far as practicable, offensive or injurious fumes from entering into any workroom during any period when a person is employed therein.

4. All knock-out operations shall be carried out –

   (a) in a separate part of foundry suitably partitioned off, being a room or part in which, so far as reasonably practicable and suitable local exhaust ventilation and a high standard of general ventilation are provided; or

   (b) In an area of foundry in which, so far as reasonably practicable effective and suitable local exhaust ventilation is provided or where compliance with this requirement is not reasonably practicable a high standard of general ventilation is provided.

5. All dressing or fettling operation shall be carried out-

   (a) in a separate room or in a separate part of the foundry suitably partitioned off; or

   (b) in an area of the foundry set apart for the purpose;

   and shall, so far as reasonably practicable, be carried out with effective and suitable local exhaust ventilation or other equally effective means of suppressing dust, operating as near as possible to the point or origin of the dust.

11. Maintenance and examination of exhaust plant-

1. All ventilation plant used for the purpose of extracting suppressing or controlling dust or fumes shall be properly maintained.

2. All ventilation plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be examined and inspected once every week by factory. It shall be thoroughly examined and tested by a competent person at least once in every period of twelve months; and particulars of the results of every such examination and test shall be entered in **Form–44** which shall be available for inspection by an Inspector-cum-Facilitator. Any defect found on any such examination and test shall be immediately reported in writing by the person carrying out the examination and test to the occupier or manager of the factory.

12. Protective Equipments-

1. The occupier shall provide and maintain suitable protective equipment specified for the protection of workers-

   (a) suitable gloves or other protection for the hands for workers engaged in handling any hot material likely to cause damage to the hands by burn, scald or scar, or in handling pig iron, rough castings or other articles likely to cause damage to the hands by cut or abrasion ;

   (b) Approved respirators for workers carrying out any operations creating a heavy dust concentration which cannot be dispelled quickly and effectively by the existing ventilation arrangements.

2. No respirator for the purpose of clause 1(b) has been worn by a person shall be worn by another person if it has not since been thoroughly cleaned and disinfected.

3. Persons who for any of their time-

   (a) work at aspout of or attend to a cupola or furnace in such circumstances that material there from may come into contact with the body being material at such a temperature that its contact with the body would cause a burn; or

   (b) are engaged in, or in assisting with the pouring of molten metal ; or

   (c) carry by hand or move by manual power any ladle or would containing molten metal ;

   (d) are engaged in knocking-out operation involving material at such a temperature that its contact with the body would cause a burn; shall be provided with suitable footwear and gaiters which if worn by them prevent, so far as reasonably practicable risk of burns to their feet and ankles.

4. Where appropriate, suitable screens shall be provided for protection against flying material (including splashes of molten metal and sparks and Chios thrown off in the course of any process.)

   The occupier shall provided and maintain suitable accommodation for the storage and make adequate arrangements for clearing and maintaining of the protective equipment supplied pursuance of this paragraph.

13. Washing and bathing facilities-

(1) There shall be provided and maintained in clean state and good repair for the use of all workers employed in the foundry-

   (a) A wash place under cover with either-

      (i) a trough with impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimetres for every 10 such persons employed at any one time and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimetres ; or

      (ii) at least one tap or stand pipe for every such persons employed at any time and having a constant supply of clean water, the tap or stand pipe being spaced not less than 1.2 meters apart; and

   (b) not less than one half of the total number of the total number of washing places provided under clause (a) shall be in the form of bath-rooms.

   (c) A sufficient supply of clean towels made of suitable material changed daily with sufficient supply of nail brushes and soap.

(2) The facilities provided for the purposes of sub-paragraph (1) shall be placed in charge of a responsible person or persons and maintained in a clean and orderly condition.

14. Disposal of waste.-

Appropriate measures shall be taken for the disposal of all waste products from shell moulding (including waste burnt-sand) as soon as reasonably practicable after the castings have been knocked out.

15. Disposal of dress and skimming.-

Dress and skimming removed from molten or taken from a furnace shall be placed forthwith in suitable receptacles.

16. Material and equipment left out of doors.-

All material and equipment left out of doors (including material and equipment so left only temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary risk. There shall be safe means of access to all such material and equipment and so far as reasonably practicable, such access shall be by roadways or pathways which shall be properly maintained. Such roadways or pathways shall have a firm and even surface and shall, so far as reasonably practicable, be kept free from obstructions.

17. Medical facilities and records of examinations and tests.-

1. The occupier of every factory to which this Schedule applies shall-

   (a) employ a factory medical officer for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator ; and

   (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

2. The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector-cum-Facilitator, which shall be kept readily available for inspection by the Inspector

18. Medical examination by Medical Officer (Certifying Surgeon)**.-**

1. Every worker employed in a foundry shall be examined by Medical Officer (Certifying Surgeon) within 15 days of his employment. Such medical examination shall include pulmonary function tests and chest-X-ray. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer (Certifying Surgeon).

2. Every worker employed in the said processes shall be re-examined by Medical Officer (Certifying Surgeon) at least once in every twelve months. Such examination shall, wherever the Medical Officer (Certifying Surgeon)considers appropriate include all the tests as specified in sub-paragraph (1) except chest X-ray which shall be done once in 3 years.

3. The Medical Officer (Certifying Surgeon) after examining a worker shall issue a certificate of Fitness in **Form 24**. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the surgeon in a **health register in Form 42.**

4. The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

5. If at any time the Medical Officer (Certifying Surgeon) is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and in the health register. The entry of his findings in those documents shall also include the period for which he considers that said person is unfit for work in the said processes.

6. A person who has been found unfit to work as provided in sub-paragraph 5 above shall be re-employed or permitted to work in the said processes unless the Medical Officer (Certifying Surgeon), after further examination, again certifies him fit for employment in those processes.

Schedule XXIX. Handling and Processing of Cotton

1. Application –

This Schedule shall apply to all factories or part of factories in which any of the following processes are carried on;

(a) Opening of Cotton Bale

(b) Carding

(c) Combing of Cotton

(d) Spinning of Cotton Yarn

(e) Cleaning of Cotton Waste

2. Definition:

For the purpose of this Schedule "Efficient exhaust draught" means localized ventilation by mechanical means, for the removal of cotton dust so as to prevent dust from escaping in to the air of any place in which work is carried on.

3. Exhaust Draught Examination and Tests:

(1) An efficient exhaust draught shall be provided and maintained by the occupier for the following processes and machines to trap cotton dust or fluff at source of origin and those in air

(a) Bale breaking and mixing of cotton;

(b) Blow room machinery, cards, combing, spinning, winding machines;

(c) Machines used for processing waste cotton;

(d) Any other process in which cotton dust is given off in to work environment.

(2) All equipment for extraction of cotton dust or fluff shall be examined and tested by competent person at least once in every twelve months and any defects disclosed by such examination and tests, shall be rectified. A test report in **Form 44** shall be available for inspection by an Inspector-cum-Facilitator .

4. Protective appliances:

The occupier shall make arrangement for –

(a) Supply of a suitable personal protective appliances to all workers likely to expose to cotton fluff or dust;

(b) Supply of these appliances on individual basis

(c) Maintaining these appliances in working condition by cleaning and replenishment;

(d) Storage of these appliances in hygienic condition;

(e) Education of workers to use these appliances; and

(f) Proper supervision to ensure the workers are using these appliances in working process.

5. Medical Examination:

(1) The occupier shall arrange for medical examination of workers by a factory medical officer having adequate experience in treatment of person affected by lung ailments at least once in a period of 6-months. Such medical examination shall include lung function tests, immunoglobulin test and any other tests which may be found necessary to detect the cases of above referred disease.

(2) The occupier shall keep a continuous medical surveillance so that susceptible workers may be detected and transferred out of the exposure before irreversible damage cause to the health of the workers.

6. Environment Monitoring: the occupier of the factory shall ensure that,

(1) Cotton dust in ambient air of the work room or any other place where cotton is processed or handled shall not exceed concentration 0.2 mg/m3.

(2) Environment in those areas shall be regularly monitored and results shall be made available to the Inspector-cum-Facilitator on demand.

7. Control Measures:

Without prejudice to other methods as stated above for prevention of above referred dieses, the occupier shall adopt such other control measures like adoption of vacuum stripping of cards instead of brush stripping, cleaning of the work room by vacuum cleaners instead of brooms or any other measures, as the Inspector-cum-Facilitator may suggest at any time.

8. House Keeping:

A high standard of house keeping shall be provided and maintained by the occupier.

9. Exemption:

If in respect of any factory, the Chief Inspector-cum-Facilitator is satisfied that owing to exceptional circumstances all or any of the provisions of this Schedule are not necessary for the protection of the workers of the factory, the Chief Inspector-cum-Facilitator may certify in writing (which at his discretion revoke at any time) exempt such factory from all or any of such provisions of this Schedule subject to such conditions, in any, as he may specify therein

Schedule XXX. Ship building, ship-repairing, and ship and ship-breaking

(1) Application. — This Schedule shall as respects work carried out in any of the operations as defined in para (2) of this Schedule.

(2) Definitions.— In this Schedule, unless there is anything repugnant in the subject or context—

(a) "**certificate of entry**" means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates, and certifies that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil tanks specified in the certificate and found that regard to all of circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion be permitted;

(b) "Hot work" means work which involves—

i. welding, cutting, burning, soldering, brazing, or chipping by spark, flame producing tools; or

ii. use of non-flameproof electrical equipments with internal combustion engines;

and including any other work which is likely to produce sufficient heat capable of igniting flammable gases or vapours :

(c) "naked light certificate" means a certificate which is given by a person who is competent analyst and who is competent to give such certificates and certifies that he has in an adequate and suitable manner tested for the presence of flammable vapour, oil in ship or vessel specified in the certificate and found it to be free there from and the having regard to all the circumstances of the case, including the likelihood of otherwise becoming flammable, the use of naked light, fires, lamps, or heated rivets of any hot work to be carried out may in his opinion be permitted in the oil-tank, compartment, space or other part of the vessel, ship specified in the certificates;

(d) "Oil" means any liquid which has a flash point below 132 degrees centigrade and also include lubricating oils, liquid methane, liquid butane and liquid propane;

Explanation : Flash point wherever is occurs in this Schedule shall be flash point as determined by Aback Closed Cup or Pensky-Marten Closed Cup procedures as described in I. S. 1448-1960.

(e) "oil-tank" means any tank or compartment in which oil is or has been carried;

(f) "The operations" means – construction, reconstruction, or breaking up of any ship or vessel, repairing, refitting, painting and finishing.

(g) "ship and vessel" have the same meaning as given in the merchant shipping act, 1958;

(h) "Shipyard" means any yard or dry dock (including the precincts thereof) in which ships or vessels are constructed reconstructed repaired refitted finished or broken.

(i) "Stage" means any temporary platform on or from which person employed performs work in connection with the operation, but does not include a boatswains' chair.

(j) "Staging" including any stage and any upright, thwart, thwart pin wedge distance place, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any stage and any guard – rails connected with a stage; and

(k) "Tanker" means a vessel constructed or adopted for carrying a cargo of oil in bulk."

(3) Access to vessels in dry dock.—

(a) If a ship is lying in a dock for the purpose of undergoing any of the operations, there shall be provided as means of access for use of workers at such times as they have to pass to, or from the ship or dry dock—

i. where reasonably practicable; one or more ship's accommodation ladders; or

ii. one or more soundly constructed gangways or similar constructions.

(b) The means so provided shall be not less than 55 centimetres wide, properly secured and fenced throughout on each side to a clear height of 90 centimetres by means of upper and lower rails, taut ropes or chains or by any other safe means, except that in the case of ships accommodation ladder, such fencing shall be necessary on one side only provided that the other side is properly protected by the ship's side;

(c) Where at any dry dock, there is a gangway giving access from an alter of the dock to a vessel which is in the dock for the purpose of undergoing any of the operations and the edge of the alter is unfenced, adequate hand-holds shall be available for any length of the alter which workers commonly use when passing between the gangway and the nearest flight of steps which gives access to ground level;

(4) Ladders.—

(a) Subject to clauses (b) and (c) of this Schedule, every ladder which affords a means of access communication or support to a person shall —

(i) be soundly constructed and properly maintained; and

(ii) be of adequate strength for the purpose for which it is used; and

(iii) be securely fixed either—

(aa) as near its upper resting place as possible or

(bb) where this is impracticable at its base of where such fixing is impracticable a person shall be stationed at the base of the ladder when in used to prevent it from slipping; and

(iv) unless there is other adequate hand-hold extend to a height of at least 75 centimetres above the place of landing or the highest ruing to be reached by the foot of any person working on the ladder as the case may be or if this is impracticable to the greatest practicable height.

(b) Provision contained in sub-clauses (iii) and (iv) of clause (4) of this Schedule shall not apply to fixed ladders of a ship or to rope ladders. Effective measures by means of roping off or other similar means shall be taken to prevent the use of fixed ladders of a ship which do not comply with requirements (i) and (ii) of that clause.

(c) Any worker who removes any ladder and sets it up in a new position shall, as regards that ladder, comply with sub-clause (iii) of clause (a) of this Schedule.

(d) Rope leaders shall provide foot-hold of a depth including any space behind the ladder of not less than 12 centimetres and, so far as is reasonably practicable, suitable provision shall be made for preventing such ladders from twisting.

(5) Lashing of ladders.—

(a) A fiber-rope, or a rope made with stands consisting of wire covered with fiber shall not be used to secure a ladder used for the purpose of the operations.

(b) A wire-rope shall not be used to secure any such ladders unless its ends are females, but this provision shall not apply in the case of an end which is so situated or protected that a person using the ladder is not liable to come into contact with it so as to suffer injury.

(6) Boatswain's chairs.—

i. Boatswains' chair and chains ropes or other gear used for their suspension shall be of sound materials, adequate strength and suitable quantity and the chains, ropes or other gear shall be securely attached.

ii. Suitable measures shall be taken to prevent where possible the spinning of a boatswain's chair to prevent the tripping of a boatswain's chair and to prevent any occupant falling there from.

(7) Throwing down materials and articles. -

(a) Subject to the provisions of clause (b) of this Schedule, parts of staging tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers, but shall be properly lowered.

(b) When the work to be done necessarily involves the throwing down, from a height, of article or materials, conspicuous notice shall be posted to warn persons from working or passing underneath the place from which articles or materials may fall, or the work shall be done under the direct supervision of a competent person in authority.

(c) No person shall throw down any articles or materials from a height except in accordance with the requirement of this Schedule.

(8) Loose articles or materials. -

So far as practicable, step shall be taken to minimize the risk arising from loose articles or materials being left lying about in any place from which they may fall on workers or persons passing underneath.

Precautions against asphyxiation, injurious fumes, explosions or fire: -

(9) Certification for entry into confined spaces likely to contain dangerous substances. -

A space shall not be certified under Section 18(2)(f) of the Code unless-

(a) any flammable liquids or refrigerant gases by proper purging and any carbon dioxide has been removed-

(b) effective steps have been taken to prevent any ingress of dangerous fumes;

(c) any sludge or other deposit liable to give off dangerous fumes has been removed and the space contains no other material liable to give off dangerous fumes; and

(d) the space has been adequately ventilated and tested for dangerous fumes, carbon dioxide or any other toxic gas or vapour, and has a supply of air adequate for respiration.

(10) Precaution against shortage of oxygen. -

No person shall enter or remain in any confined space in a vessel, being a confined space in which there is a reason to apprehend that the proportion of oxygen in the air is so low as to involve risk of person being overcome, unless either-

(a) the space has been and remain adequately ventilated and responsible person has tested it and certified that it is safe for entry without breathing apparatus; or

(b) he is wearing a suitable apparatus and a safety belt securely to a rope, and free end of which is held by a person standing outside the confined space.

(11) Construction of plant for cutting, welding or heating metal. -

(a) Pipes or the hoses for the supply of oxygen or any flammable gas or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound material and properly maintained.

(b) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other equally effective appliances.

(c) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any flammable gas or vapour at a pressure above atmospheric pressure while the gases or vapours from such cylinders are being used in any process of cutting, welding or heating metal.

(d) Where acetylene gas is used for cutting, welding or heating metal -

(i) a properly constructed and efficient back-pressure valve and flame arrester shall be provided and maintained in the acetylene supply pipe in each burner or blow-pipe and acetylene generator, cylinder or container from which it is supplied, and shall be placed as near as practicable to the burner or blow-pipe, except that this requirement shall not apply where an acetylene cylinder serves only one burner or blow-pipe; and

(ii) any hydraulic valve provided in pursuance of the preceding sub-clause shall be inspected on each day by every person who uses the burner or blow-pipe on that day and it shall be the duty of every worker who used the burner or blow pipe to inspect the hydraulic valve accordingly.

(e) The operating valves of blow-pipe or burner to which oxygen or any flammable gas or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or operating mechanism shall be so protected, that the valves can not open accidentally.

(12) Precautions after use of apparatus for cutting, welding or heating metal.

(a) In the case of apparatus on board or vessel is used for cutting, welding or heating the metal with aid of oxygen or any flammable gas or vapour supplied at a pressure above atmospheric pressure, the precautions specified in the following clauses of this Schedule shall be taken when such use ceases for the day or for substantial period and apparatus is to be left on the board, but need not be taken when such use is discontinued merely during short interruption of work: The provision of clause (c) and (d) of this para 11 shall not apply during a meal interval, provided that the responsible person is placed in charge of the plant and equipment referred to therein:

(b) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.

(c) Movable pipes or hoses used for conveying oxygen or flammable gas or vapour and the welding and cutting torches shall, in the case of a vessel undergoing construction, be brought to the top most completed deck, or in the case of vessel undergoing repair, to a weather deck or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes:

Provided that where owing to the nature of the work, it is impracticable to comply with the foregoing requirement of this clause, the pipes or hoses shall be disconnected from cylinders, generators or gas mains, as the case may be.

(13) Naked light and hot work on oil-carrying vessels. -

(a) Subject to the provisions of clause (b) of this para and without prejudice to the provision of sub para (17) no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this para)-

(i) shall be permitted to, or to be in, or any hot work permitted to be carried out in any part of a tank, unless, since oil was last carried in that tank, a naked light certificate has been obtained and is in force in respect of that parts of the tank for which, in the opinion of a competent analyst, a naked light certificate is necessary:

Provided that a naked light, fire or lamp of a kind specified in writing by a competent analyst, a naked light certificate is necessary:

(ii) shall be permitted-

(aa) to be in any oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 degree centigrade or liquid butane, nor any hot work permit to be carried out in any such oil tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank, compartment or space adjacent thereto;

(bb) to be applied to outer surface of any oil-tank on board or in a vessel in which oil-tank the oil last carried was a aforesaid nor any work of such a nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours permitted to be carried out on the outer surface of such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil tank;

(cc) to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid, nor any work permitted to be carried in such compartment or space as aforesaid, nor any work of such nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours, permitted to be carried out on the outer surface of such compartment or space, unless a naked light certificate has previously been obtained on the day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in paragraph (aa), (bb) or (cc) of this sub-clause a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extent, such daily certificate need not be obtained or as the case may be, need only be obtained to the specified extent;

(iii) shall be permitted to be applied to the outer surface of, or to be in any oil-tank on board or in vessel nor any hot work permitted to be carried out in any such oil-tank or vessel; nor any work of such nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours, permitted to be carried out on the outer surface of the oil-tank or vessel, since oil was last carried in that oil-tank, a naked light certificate has been obtained and is in force in respect of that oil-tank;

(iv) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in vessel nor any hot work permitted to be carried out in any such compartment or space, nor any work of such nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours, permitted to be carried out on the outer surface of any such compartment or space, unless, since oil was last carried as cargo in that oil-tank, a naked light certificate has been obtained and is in force in respect of that compartment or space.

(b) No person shall introduce, have or applied naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this sub-para) into, in or to any place where they are prohibited by this sub-para.

(c) No person shall carry out hot work of such nature, which is likely to produce sufficient heat capable of igniting flammable gases or vapors, in any place or any surface where they are prohibited by this sub-para.

(d) In this sub-para, the expression "competent analyst" means an analyst who is competent to give a naked light certificate.

(14) Entering oil-tanks. -

(a) No person (other than an analyst entering with a view to issuing of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this sub-rule, enter or remain in an oil-tank on board or in a vessel unless, since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.

(b) Without prejudice to clause (a) of this sub-para, no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in an oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 degree centigrade unless, since the oil-tank last contained oil, an analyst has certified that the atmosphere is sufficiently free from flammable mixture.

(c) The provisions of this sub-para are without prejudice to the provisions of sub-para (10).

(15) Posting of certificates. -

Every occupier for whom a naked light certificate or a certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where all persons concerned may conveniently read it.

(16) Cleaning of oil-tanks. -

(a) Before a test for flammable vapour is carried out with a view to issue of a naked light certificate for the purposes of sub-para (13) in respect of an oil-tank on board or in a vessel, that oil-tank shall, since oil was last introduced in to the tank, be cleaned and ventilated in accordance with clause (b) of this sub-para.

(b) The said cleaning ventilation shall be carried out by the following methods:-

(i) The oil-tank shall be treated in such manner and for such period as shall ensure the vaporization of all volatile oil;

(ii) All residual and any sludge or other deposit in the oil-tank shall be removed there from; and

(iii) After the oil-tank has been clean-

(aa) all covers of manholes and other operating therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to the removal of all oil vapour and then

(bb) the interior surface, shall be washed or scrapped down, if any deposit remains thereon.

(17) Provisions as to work in other compartments or spaces. -

(a) Without prejudice to the other provisions of this para, if the presence of oil is in such quality and in such position as to be likely to give rise to fire or explosion is detected in any part of a vessel, being a part to which this sub-para applies and in which repairs of the following kind are to be or are being undertaken, that is to say repairs involving the use of a naked light, fire or lamp other than a safety of a type approved for the purpose of sub para (23) or involving hot work, such repair shall not be started or continued until a naked light certificate has been issued or, as case may be, issued in respect of that part of the vessel;

(b) This para shall apply to bilges, shaft-tunnels, pump rooms, lamp-rooms and to compartments and spaces other than those to which clause (a)(iv) of sub-para (13) applies.

(18) Hand protection. -

Adequate protection of hand shall be available for all workers when using, cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine riveting or in transporting or stacking plates or in handling plates at machines.

(19) Protection in connection with cutting or welding. -

(a) Suitable goggles fitted with tinted eye-pieces shall be provided and maintained for all persons employed when using, cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at pressure above atmospheric pressure.

(b) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding-

(i) Suitable helmets or suitable head-shields to protect the eyes and face from hot metal and from rays likely to be injurious.

(ii) Suitable gauntlets to protect the hands and forearms from hot metal and from rays likely to be injurious.

(c) When electric welding is in progress at any place and persons other than engaged in those process are employed in a position where the rays are likely to be injurious to their eyes, screen shall, where practicable, to be provided at that place for the protection of these persons. Where it is not practicable to provide effective protection of those persons by screening, suitable goggles shall be provided for their use.

(20) Head protection. -

When workers are employed in areas where there is danger of falling objects they shall be provided with suitable helmets.

(21) Safety belts and lifelines. -

(a) Whenever any worker is engaged on work at a place from which he is liable to fall more than 2 meters, he shall be provided with safety belts equipped with lifelines, which are secured with a minimum of stakes, to a fixed structure unless any other effective means such as provision of guard-rails or guard-ropes are taken to prevent his falling.

(b) All safety belts and lifeline shall be examined at frequent intervals by a competent person to ensure that no belt or lifeline which is not in a good condition is used.

(22) Health and Welfare. -

Prohibition of employment of young persons in certain processes: -

No young person shall be employed in-

(a) the application of asbestos by means of spray;

(b) the breaking down for removal of asbestos lagging;

(c) the cleaning of sacks or other containers which have contained asbestos;

(d) the cutting of material containing asbestos;

(e) the scaling, skirting or cleaning of boilers, combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

(23) Safety Supervision. -

In the case of every shipyard, a person experienced in the work of such yards shall be appointed and employed exclusively to exercise general supervision of the observance of these para and to promote the safe conduct of the work generally:

83B. Constitution of Site Appraisal Committee under Section 83. -

(1) The State Government may, for purposes of advising it to consider applications for grant of permission for the initial location of a factory involving a hazardous process or for the expansion of any such factory, appoint a Site Appraisal Committee consisting of—

(a) the Chief Inspector-cum-Facilitator of the State who shall be its Chairman;

(b) a representative of the Central Board for the Prevention and Control of Water Pollution appointed by the Central Government under Section 3 of the Water (Prevention and Control of Pollution) Act, 1974;

(c) a representative of the Central Board for the Prevention and Control of Air Pollution referred to in Section 3 of the Air (Prevention and Control of Pollution) Act 1981;

(d) a representative of State Board appointed under Section 4 of the Water (Prevention and Control of Pollution) act, 1974;

(e) a representative of the State Board for the Prevention and Control of Air Pollution referred to Section 5 of the Air (Prevention and Control of Pollution) Act 1981;

(f) a representative of the Department of environment in the State;

(g) a representative of the Meteorological Department of the Government of India;

(h) an expert in the field of occupational health; and

(i) a representative of the Town Planning Department of the Government, and

(j) not more than five other members who may be co-opted by the State Government and who shall be

(i) a scientist having specialized knowledge of the hazardous process which will be involved in the factory,

(ii) a representative of the local authority within whose jurisdiction the factory is to be established, and

(iii) not more than three other persons as deemed fit by the State Government.

(k) Senior Inspector-cum-Facilitator of Factories (Chemical), Ahmedabad – Member Secretary.

(2) The Site Appraisal Committee shall examine an application for the establishment of a factory involving hazardous process and make its recommendation to the State Government within a period of thirty days of the receipt of such application in Form……..

(3) Where any process relates to a factory owned or controlled by the Central Government or to a corporation or a company owned or controlled by the Central Government, the State Government shall co-opt in the Site Appraisal Committee a representative nominated by the Central Government as a member of that Committee.

(4) The Site Appraisal Committee shall have power to call for any information from the person making an application for the establishment or expansion of a factory involving a hazardous process.

(5) The following provisions shall govern the functioning of the Site Appraisal Committee:-

(a) No member, unless required to do so by a Court of Law, shall disclose otherwise than in connection with the purpose of the Code, any information relating to manufacturing or commercial business or any working process which may come to his knowledge during his tenure as a Member of this Committee.

(b) Application for appraisal of sites in respect of the factories covered under Sec. 2 (1)(za) of the Code shall be submitted to the Chairman of the Site Appraisal Committee.

(c) The Committee may dispense with furnishing the information on any particular item in the Application Form if it considers the same to be not relevant to the application under consideration.

(d) The Member Secretary shall arrange to register the applications received for appraisal of site in a separate register and acknowledge the same within a period of seven days.

(e) The Member Secretary shall fix by meeting in such a manner that all applications received and registered are referred to the Committee within a period of one month from the date of their receipt.

(f) This Committee may adopt a procedure for its working keeping in view the need for expeditious disposal of applications.

(g) The Committee shall examine the application for appraise of site with reference to the prohibition and restrictions on the location of industry and the carrying on of processes and operations in different areas as per the provisions of rule 5 of the Environment (Protection) Rules, 1996 framed under the Environment Protection Act, 1986.

(h) The Committee may call for the documents, examine reports, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.

(i) Wherever the proposed site requires clearance by the Ministry of Industry or the Ministry of Environment and Forests, the application for site Appraisal shall be considered by the site Appraisal Committee only after such clearance has been received.

83C. Quality of Personal Protective Equipment under section 82(d). -

All personal protective equipment provided to workers as required under any of the provisions of the Code or rules shall conform to the relevant Indian Standards, if any or in the absence of it, Personal protective equipment approved by the Chief Inspector-cum-Facilitator:

Provided that the personal protective equipment not having relevant Indian Standard or not having approval from Chief Inspector-cum-Facilitator, then personal protective equipment compliant with EN (European Standard) or ANSI (American National Standard Institute) or ISO (International Organization for Standardization) may be considered.

83D. Compulsory Disclosure of Information of Hazardous Process to Worker under section 84. -

(1). The Occupier of a factory involving a “hazardous process” shall supply to all workers following information in relation to handling of hazardous materials or substances in the manufactures, transportation, storage and other processes:

(a) Requirement of section 84, 85 & 89 of the Code.

(b) a list of hazardous processes carried on in the factory

(c) location and availability of all material data sheet as per rule Manufacture, Storage and Import of Hazardous Chemicals Rules,1989

(d) physical and health hazards arising from the exposure to or handling of substances;

(e) Measures taken by the occupier to ensure safety and control of physical and health hazards.

(f) measures to be taken by the workers to ensure safe handling storage and transportation of hazardous substances;

(g) personal protective equipment required to be used by workers employed in ‘hazardous process’ or ‘dangerous operations’;

(h) meaning of various labels and marketing used on the containers of hazardous substances as provided under rule Manufacture, Storage and Import of Hazardous Chemicals Rules,1989

(i) signs or any symptoms likely to be manifested on exposure to hazardous substances and to whom to report;

(j) measures to be taken by the workers in case of any spillage or leakage of a hazardous substance;

(k) role of workers vis-à-vis the emergency plan of the factory, in particular and the evacuation procedures;

(l) Any other information considered necessary by the occupier to ensure safety and health of workers.

(2) The information required by sub-rule (1) shall be complied and made known to workers individually through supply of booklets or leaflets and display of cautionary notices at the work places.

(3) The booklets, leaflets and the cautionary notice displayed in the factory shall be in the language understood by the majority of the workers and also explain to them.

(4) The Chief Inspector-cum-Facilitator may direct the occupier to supply further information to the workers as deemed necessary.".

83E. Disclosure of information of hazardous process to Chief Inspector-cum-Facilitator under section 84. -

(a) The occupier of every factory involving a 'hazardous process' shall furnish, in writing, to the Chief Inspector-cum-Facilitator; a copy of all the information furnished to the workers.

(b) A copy of compilation of material safety data sheets in respects of hazardous substances used, produced or stored in the factory shall be furnished to the Chief Inspector-cum-Facilitator or the local Inspector-cum-Facilitator of factories.

(c) The occupier of every factory involving hazardous process, before complete or partial closure of manufacturing process (other than of a temporary nature) in a factory or in any section or department of a factory, shall dispose-off all hazardous materials, produced or stored in a factory and shall inform in writing to the Chief Inspector-cum-Facilitator or local Inspector-cum-Facilitator of factories regarding hazardous materials disposed off.

(d) The occupier shall also furnish any other information asked for by the Chief Inspector-cum-Facilitator from time to time for the purpose of this Act and rule made there under.

83F. Disclosure of Health and Safety Policy under section 84. -

(1) The occupier of every factory covered under the first Schedule under Sec. 2 (1) (za) or carrying out processes or operations declared to be dangerous under Sec. 82 of the Code shall prepare a written statement of his policy in respect of health and safety of workers at work.

(2) Notwithstanding anything contained in sub-rule (1), the Chief Inspector-cum-Facilitator may require the occupiers of any of the factories or class or description of factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.

(3) The health and safety should contain or deal with:

(a) declared intension and commitment of the top management to health, safety and environment and compliance with all the relevant statutory requirements;

(b) organizational set up to carry out the declared policy assigning the responsibility at different levels; and

(c) arrangements for making the policy effective.

(4) In particular, the policy shall specify the following:

(a) arrangements for involving the workers;

(b) intention of taking account the health and safety performance of individuals at different levels while considering their career advancement;

(c) fixing the responsibility of the contractors, sub-contractors, transporters and other agencies entering the premises;

(d) providing a resume of health and safety performance of the factory in its annual report;

(e) relevant techniques and methods such as safety audits and risk assessment for periodical assessment at least once in every two years of the status on health, safety and environment and taking all the remedial measures;

(f) stating its intention to integrate health and safety, in all decisions including these dealing with purchase of plant, equipment. machinery and material as well as selection and placement of personnel;

(g) arrangements for informing educating and training and retraining its own employees at different levels and the public, wherever required.

(5) A copy of the declared health and safety policy signed by the occupier shall be made available to the Inspector-cum-Facilitator having jurisdiction over the factory and to the Chief Inspector-cum-Facilitator of the Inspector-cum-Facilitator of Factories; The policy shall be made widely known by :-

(a) making copies available to all workers including contract workers, apprentices, transport workers, suppliers, etc.

(b) displaying copies of the policy at conspicuous places, and any other means of communication; in a language understood by majority of workers.

(6) The policy shall be made widely known by

(a) making copies to all workers including contract workers, apprentices, transport workers and suppliers, etc…

(b) displaying copies of the policy at conspicuous places and

(c) any other means of communication

In a language understood by majority of workers;

(7) The occupier shall revise the safety Policy as often as may be appropriate, but it shall necessarily be revised under the following circumstances

(a) whenever any expansion or modification having implications on safety and health of persons at work is made; or

(b) whenever new substance(s) or articles are introduced. in the manufacturing process having implications on health and safety of persons exposed to such substances.

83G. Qualifications and Experience of Supervisors. -

(1). All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience:

(i) A degree in chemistry or Diploma in Chemical Engineering or Technology with 5 years' experience; or

(ii) The Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with 2 years' experience.

The experience stipulated above shall be in process operation and maintenance in the Chemical Industry.

(iii) The Chief Inspector-cum-Facilitator for factories may require the Supervisor to undergo training in Health and Safety.

(2). The syllabus and duration of the above training and the organization conducting the training shall be approved by the DGFASLI or the State Government in accordance with the guidelines issued by the DGFASLI.

83H. Specific responsibility of the occupier in relation to hazardous processes. -

(A) Medical examination-

Workers employed in a 'hazardous process' shall be medically examined by a qualified medical officer hereinafter referred to as Factory Medical Officer, in the following manner:

(a) Once before employment, to ascertain physical fitness of the person to do the particular job;

(b) Once in a period of 6 months, to ascertain the health status of all the workers in respect of occupational health hazards to which they are exposed: and in cases where in the opinion of the Factory Medical officer is necessary to do so at a shorter interval in respect of any workers;

(c) The details of pre-employment and periodical medical exam, carried out as aforesaid shall be recorded in the Register in Form 45.

(1) No person shall be employed for the first time without a certificate of fitness in Form 46 granted by the Factory Medical Officer. If the Factory Medical officer declare a person unfit for being employed in any process covered under sub-rule (1), such a person shall have the right to appeal to the Inspector-cum-Facilitator who shall refer the matter to the Medical officer (Certifying Surgeon) whose opinion shall be final in this regard. If the Inspector-cum-Facilitator is also a Certifying Surgeon, he may dispose of the application himself.

(2) Any findings of the Factory Medical officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Medical Officer (certifying Surgeon) who shall in turn, examine the concerned worker and communicate his findings to the occupier within 30 days. If the Medical Officer (Certifying Surgeon) is of the opinion that the worker so examined is required to be taken away from the process for health protection, he will direct the occupier accordingly, who shall not employ the said workers in the same process. However, the worker so taken away shall be provided with alternate placement unless he is in the opinion of the Medical Officer (Certifying Surgeon), fully incapacitated in which case the worker affected shall be suitably rehabilitated.

(3) A Medical Officer (certifying Surgeon) on his own motion or on a reference from an Inspector-cum-Facilitator may conduct medical examination of a worker to ascertain the suitability of his employment in a hazardous process or for ascertaining his health status the opinion of the Medical Officer (certifying Surgeon) in such a case shall be final. The fee required for this medical examination shall be paid by the occupier.

(4) The worker taken away from employment in any process under sub rule (2) may be employed again in the same process only after obtaining the Fitness Certificate from the Medical Officer (certifying Surgeon) and after making entry to that effect in the Health Register.

(5) The worker required to undergo Medical Examination under these rules and for any Medical Survey conducted by or on behalf of the Central or the State Government shall not refuse to undergo such a medical examination.

(B) Occupational health center.-

In respect of any factory carrying on ‘hazardous process’ there shall be provided and maintained in good order an Occupational Health Centre with the services and facilities as per scale laid down hereunder:

(a). For factories employing up to 50 workers—

(i) the services of a Factory Medical officer on retainer ship basis, in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination as stipulated and render medical assistance during any emergency.

(ii) ii. a minimum of 5 persons trained in first-aid procedures amongst whom at least one shall always be available during the working period.

(iii) a fully equipped first-aid box.

(b). For factories employing 51 to 200 workers –

(i) an Occupational health Centre heaving a room with a minimum floor area of 15 sq.m. with floor and walls made of smooth and impervious surface and with adequate illumination and ventilation as well as equipment as per the Schedule annexed to this Rule;

(ii) a part-time Factory Medical officer shall be in over-all charge of the center who shall visit the factory at least twice in a week and whose services shall be readily available during medical emergencies;

(iii) one qualified and trained dresser-cum-compounder on duty throughout the working period;

(iv) a fully equipped first-aid box in all the departments.

(c). For factories employing above 200 workers –

(i) one full-time Factory Medical officer for factories employing up to 500 workers and one more Factory Medical officer for every additional 1000 workers or part thereof.

(ii) an Occupational Health Centre having at least 2 rooms each with a minimum floor area of 15 sq. meter with floors and walls made smooth and impervious surface and adequate illumination and ventilation as well as equipment as per the Schedule annexed to this rule.

(iii) there shall be one nurse, one dresser-cum-compounder and one sweeper-cum-ward boy throughout the working period;

(iv) the Occupational Health Centre shall be suitably equipped to manage Medical emergencies.

(d)

(1) The Factory Medical Officer required to be appointed under sub-rule (1) shall have qualification included in schedules to the Indian Medical Degrees Act of 1916 or in the Schedule to the Indian Medical Council Act, 1956 and possess a Certificate of Training in industrial Health of minimum three months duration recognised by the State Government:

Provided that: -

(i) a person possessing a Diploma in Industrial/or equivalent shall not be required to possess the certificate of training as aforesaid;

(ii) the Chief Inspector-cum-facilitator may, subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in his opinion a suitable person possessing the necessary qualification is not available for appointment;

(iii) in case of a person who has been working as a Factory Medical Officer for a period of less than three years on the date of commencement of this rule, the Chief Inspector-cum-facilitator may, subject to the condition that the said person shall obtain the aforesaid certificate of training within a period of three years, relax the qualification.

(2) The syllabus of the course leading to the above certificate, and the organisations conducting the course shall be approved by the Directorate General Factory Advice Service and Labour Institutes or the State Government in accordance with the guidelines issued by the DGFASLI.

(3) Within one month of the appointment of Factory Medical Officer, the occupier of the Factory shall furnish to the Chief Inspector-cum-facilitator, the following particulars:-

(a) name and address of the Factory Medical Officer:

(b) qualifications;

(c) experience, if any; and

(d) the sub-rule under which appointed.

SCHEDULE

Equipment for Occupational Health Center in Factories

1. A glazed sink with hot and cold water always available.
2. A table with a smooth top at least 180 cm. X 105 cm.
3. Means for sterilizing Instruments.
4. A couch.
5. Two Buckets or containers with close fitting lids.
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spiritus ammoniac aromatious (120 ml.)
8. Two medium size sponges.

9. Four cakes of toilet, preferably antiseptic soap.
10. Two glass tumblers and two wine glasses.
11. Two chemical thermometers.
12. Two teaspoons.
13. Two guaranteed (120 ml.) measuring glasses.
14. One wash bottle (1000 cc) for washing eyes.
15. One bottle (one liter) carbolic lotion 1 in 20
16. Three chairs
17. One screen.
18. One electric hand torch.
19. An adequate supply of tetanus taxied.
20. Cora, one liquid (60 ml.)
21. Tablets – antihistaminic, antispasmodic (25 each ().)
22. Syringes with needles and
23. Two needle holders, big and small.
24. Suturing needles and
25. One dissecting forceps.
26. One dressing forceps.
27. One scalpels.
28. One stethoscope.
29. Rubber bandage – pressure bandage.
30. Oxygen cylinder with necessary attachments.
31. One Blood pressure apparatus.
32. One Patellar hammer
33. One Peak-flow meter for lung function measurement.
34. One Stomach wash set.
35. Any other equipment recommended by the Medical officer (Certifying Surgeon) according to specific need relating to manufacturing process
36. in addition—
    1. For factories employing 51 to 200 workers:
        i. Four plain wooden splints 900mm x 100mm x 6mm.
        ii. From plain wooden splints 350mm x 75mm x 6mm.
        iii. Two plain wooden splints 250mm x 50mm x 12mm.
        iv. One pair artery forceps.
        v. Injection – morphia, pethidins, atropine, adrenaline, Cora mine, novocan (2 each).
        vi. One surgical scissors.
    2. For factories employing above 200 workers
        i. Eight plain wooden splints 900mm x 100mm x 6mm.
        ii. Eight plain wooden splints 350mm x 75mm x 6mm

iii. Four plain wooden splints 250mm x 50mm x 12mm.

iv. Two pair artery forceps.

v. Injection morphla, pathidins, atropines, adrenaline, Cora mine, novo can (4 each)

vi. Two surgical scissors.

(C) Ambulance Van.-

In any factory carrying on 'hazardous Process' there shall be provided and maintained in good conditions, a suitably constructed ambulance van equipped with items as per sub-rule (2) and manned by a full-time Driver-cum-Mechanic and a Helper trained in first-aid, for the purpose of transportation of serious cases of accidents or sickness. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will normally be stationed at or near to the Occupational Health Centre:

Provided that a factory employing more than 200 workers may make arrangements—

Ambulance shall have the following equipments:

a. General:

- A wheeled stretcher with folding and adjusting devices; with the head of the stretcher capable of being titled upward;
- Fixed suction unit with equipment;
- Fixed oxygen supply with equipment;
- Pillow with case; sheets; Blankets; Towels; Emesis bag; Bed pan; Urinal; Glass.

b. Safety equipment:

- Flares with life of 30 minutes; flood lights;
- Flash lights; fire extinguisher dry powder type;
- Insulated gauntlets

c. Emergency Care Equipment

i . Resuscitation

- Portable suction unit; portable oxygen units;
- Bag Valve-mask, hand operated artificial ventilation unit;
- Airways; Mouth gags; Tracheotomy adaptors;
- Short spine board; I.V. Fluid with administration unit;
- B.P. Manometer; - Cugg; Stethoscope

ii. Immobilization

- Long and short padded board; Wire ladder splints;
- Triangular bandages: - Long and short spine boards.

iii. Dressing

- Gauze Pads 100mm x 100mm – Universal dressing 250mm x 900mm
- Roll of aluminium foils – Soft roller bandages 15 cm x 5 Mts.; - Adhesive tape in 75 mm; - Safety pins;
- Bandage sheets; - Burn sheet.

iv. Poisoning

- Syrup of lpecae – Activated Charcoal pre-packed in dozes: - Snakes – Snake-bite kit;
- Drinking water.

v. Emergency Medicines

vi. As per requirement (under the advice of Medical officer (Certifying Surgeon) only).

(D) Decontamination facilities. -

In every factory carrying out 'hazardous' process' the following provisions shall be made to meet emergency;

(a) Fully equipped first aid box;

(b) Readily accessible means of water for washing by workers as well as for drenching clothing of workers who have been contaminated with hazardous and corrosive substance; and such means shall be as per the scale shown in the table below:

Table

No. of persons employed	No. of drenching showers
(i) up to 50 workers	2
(ii) Between 51 to 200 workers	2 + 1 for every additional 50 or part thereof.
(iii) Between 201 to 500 workers	6+1 for every additional 100 or part thereof.
(iv) 501 workers and above	8+1 for every additional 200 or part thereof;

(b) a sufficient number of eye wash bottles filled with distilled water or suitable liquids, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.".

83I. Compulsory disclosure of information by occupier under section 84. -

1. Definitions. —

In this rule, unless the context otherwise requires. —

(a) "hazardous chemical" means—

(i). any chemical which contains any of the criteria laid down in part I of Schedule I and is listed in column (2) of part II of said Schedule 1 of this rule, or;

(ii). any chemical listed in Column 2 of Schedule 2 of this rule, or;

(iii). any chemical listed in Column 2 of Schedule 3 of this rule;

(b) "Industrial activity" means an operation or process carried out in a factory referred to in schedule 4 of this rule involving or likely to involve one or more hazardous chemicals and includes on site storage or on-site transport which is associated with that operation or process as the case may be;

(c) "isolated storage" means storage where no other manufacturing process than pumping of hazardous chemical is carried out and that storage involves at least the quantity of that chemical set out in Schedule 2, but, does not include storage associated with an installation specified in schedule 4 of this rule on the same site;

(d) "Major accident" means an incident involving loss of life in side or out side the site or one or more injuries in side and / or one or more injuries out side or release of toxic chemical or explosion or fire of spillage of hazardous chemical resulting in 'on-site' or 'off-site' emergencies or damage to equipments leading to stoppage of process or adverse effects to the environment.

(e) "major accident hazards (MAH) installations" means - isolated storage and industrial activity at a site handling (including transport through carrier or pipeline) of hazardous chemicals equal to or, in excess of the threshold quantities specified in, Column 3 of schedule 2 and 3 of this Rule respectively;

(f) "Pipeline" means a pipe (together with any apparatus and works associated therewith), or system of pipes (together with any apparatus and works associated therewith), for the conveyance of a hazardous chemical other than a flammable gas as set out in column 2 of Part II of schedule 3 of this rule at a pressure of less than 8 bars absolute;

(g) "schedule" means a schedules notified by the State Government in the *Official Gazette*;

(h) Words and expressions used but not defined in this chapter but defined or used in the Occupational Safety, Health and Working Condition Code 2020 and these rules shall have the same meaning as assigned therein.

2. Collection, development and dissemination of information.—

(1). This sub-rule shall apply to an industrial activity or isolated storage in hazardous chemical or factory involving hazardous process) which contain any of the criteria laid down in Part I of Schedule 1 and is listed in column 2 of part II of the Schedule-1 of this rule is or may involved.

(2). An occupier an industrial activity or isolated storage in terms of clause (1) shall arrange to obtain or develop information in the form of Materila Safety Data Sheet in Schedule-5 of this rule. The information shall be made accessible to workers upon request for reference.

(3). The occupier while obtaining or developing a Material Safety Data Sheet in respect of a hazardous chemical handled by him shall ensure that the information is recorded accurately and reflects the scientific evidence used in making the hazard determination in case any significant information regarding hazard of a chemical is available, it shall be added to the material safety data sheet specified in Schedule-5 as soon as practicable.

(4). Every container of a hazardous substance shall be clearly labeled or marked to identify.

(a) the contents of the container;

(b) the name and addresses of the manufacturers or importer of the hazardous substance; and

(c) the physical, chemical and toxicological nature of the hazards

(d) the recommended personal protective equipments needed to work safely with the hazardous substance.

(5) In terms of clause (4) where it is impractical to label a chemical in view of the size of the container or the nature of the package, provision shall be made for other effective means like tagging or accompanying documents.

3. Duties of Inspector-cum-Facilitator —

The Inspector-cum-Facilitator shall—

(c) inspect an industrial activity or isolated storage in hazardous chemical or factory involving hazardous process) at least once in a calendar year;

(d) send annually status report on the compliance with the sub rules by occupiers to the Directorate General Factory Advice Service and Labour Institute and Ministry of Labour through the Chief Inspector-cum-Facilitator.

(e) enforce direction and procedures in respect of an industrial activity or isolated storage in hazardous chemical or factory involving hazardous process) covered under the Code and in respect of pipe lines up to a distance of 500 m from the out side of the premises of the factory regarding;

(i) Notification of the Major Accidents as per Schedule -6 of this Rule.

(ii) Notification of sites as per Schedule -7 of this Rule.

(iii) Safety reports as per Schedule -8 of this rule.

(iv) Preparation of on-site emergency plans as prescribe by Chief Inspector-cum-Facilitator for Factories

4. General responsibility of the Occupiers.—

(1) this sub rule shall apply to…

(a) an industrial activity other than isolated storage, in which a hazardous chemical which contain any of the criteria laid down in part I of Schedule 1 or is included in the listed in column 2 of Part II of the Schedule 1 of this rule and

(b) Isolated storage in which a threshold quantity is equal to or more than the quantity of a hazardous chemical listed in Column 2 of the Schedule 2 which is equal to or more than the threshold quantity specified in this Schedule 2 for the chemical in Column 3 thereof.

(2) The occupier in terms of clause (1) shall provide evidence to show on demand that he has —

(a) Identified the major accident hazards; and

(b) Taken adequate steps to —

(i) prevent such major accidents and to limit their consequences to persons and the environment; and

(ii) Provide the persons working on the site with information training and equipment including antidotes necessary to ensure their safety and health.

5. Notification of major accidents.—

(1) Where a major accident occurs on site or in a pipe line within factory, the occupier shall within forty eight hours notify to the Inspector-cum-Facilitator of Factories of that accident, and furnish thereafter to the Inspector-cum-Facilitator of Factories a report relating to the accident in instalments, if necessary, in Schedule 6.

(2) the Inspector-cum-Facilitator of Factories shall on receipt of the report in accordance with clause (1) shall undertake a full analysis of the major accident and send the requisite information to the Directorate General Factory Advice Service and labour Institute(DGFASLI) and the Ministry of Labour through the Chief Inspector cum Facilitator.

(3) An occupier shall notify to the Inspector-cum-Facilitator of factories steps taken to avoid any repetition of such occurrence on a site.

(4) the Inspector-cum-Facilitator of Factories shall compile information regarding major accidents and make available a copy of the same to the Directorate General Factory Advice Service and labour Institute and the Ministry of Labour, through the Chief Inspector-cum-Facilitator.

(5) the Inspector-cum-Facilitator of Factories shall inform the occupier in writing of any lacunae, which in their opinion needs to be rectified to avoid major accidents.

6. Industrial activities or isolated storage prescribe in para 7 to 13 shall apply.

(a) Sub-rules 7, 8, 12 & 13 shall apply to an industrial activity, other than isolated storage, in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 3 which is equal to or more than the threshold quantity specified in the entry for that chemical inn column 3.

(b) Sub-rules 8 to 10 shall apply to an industrial activities other than isolated storage, in which, there is a involved a quantity of a hazardous chemical listed in the column 2 of schedule 3 which is equal to or more than the threshold quantity specified in the entry for that chemical in column 4;

(c) Sub-rules 5 & 6 shall apply to an isolated storage including involved in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the threshold quantity specified in the entry for that chemical in column 3; and

(d) Sub-rules 7 & 8, shall apply to an isolated storage including involved in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the threshold quantity specified in the entry for that chemical in column 4;

7. Notification of site.:–

(1) An occupier shall not undertake any industrial activity or isolated storage unless he has submitted a written report to the Chief Inspector-cum-Facilitator containing the particulars specified in Schedule 7 at least ninety days before commencing that activity or before such shorter time as the Chief Inspector-cum-Facilitator may agree and for the purposes of this sub-rule an activity in which subsequently there is or is liable to be threshold quantity given in Column 3 of Schedules 2 and 3 or more of an additional hazardous chemical shall be deemed to be a industrial activity or isolated storage and shall be notified accordingly.

(2) The Chief Inspector-cum-Facilitator, within sixty days from the date of receipt of the report in accordance with clause (1) of this sub-rule, shall examine and on examination of the report if he is of the opinion that contravention of the provisions of the Act or the rules made there under has taken place, he may issue notice for obtaining compliance.

8. Updating of the site notification.

Where an activity has been reported in accordance with clause (1) of sub-rule (7) and the occupier makes a change in it (including an increase or decrease in the maximum quantity of a hazardous chemical to which this rule applies which is or is liable to be at the site or in the pipeline or at the cessation of the activity) which affects the particular specified in that report or any subsequent report made under this sub-rule, the occupier shall forthwith furnish a further report to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator.

9. Safety Reports and Safety Audit Reports.—

(1). Subject to the following clause of this sub-rule, an occupier shall not undertake any industrial activity or isolated storage to which this sub-rule applies unless he has prepared a safety reports on that industrial activity containing the information specified in Schedule 6 and has sent a copy of that report to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator at least ninety days before commencing that activity.

(2). After commencement of these rules, the occupier of both the new and the existing industrial activities or isolated storage shall arrange to carry out safety audit by a competent agency to be accredited by Chief Inspector-cum-Facilitator. Further, such auditing shall be carried as under:-

(a) internally once in a year by a team of suitable plant personnel;

(b) externally once in two years by a competent agency accredited in this behalf;

(c) in the year when an external audit is carried out, internal audit need not be carried out.

(3) the occupier, within thirty days of the completion of the audit, shall send a report to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator with respect to the implementation of the audit recommendation.

10. Updating of reports under sub-rule (9)

(1) where an occupier has made a safety report in accordance with clause (1) of sub-rule 9, he shall not make any modification to the industrial activity or isolated storage to which that safety report relates which could materially affect the particulars in that report, unless he has made a further report to take account of those modification and had sent a copy of the report to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator at least ninety days before making those modifications;

(2) Where an occupier has made a report in accordance with his sub-rule 7 and clause (1) of this rule and that industrial activity or isolated storage is continuing, the occupier shall within three years of the date of last such report make a further report which shall have regards in particular to new technical knowledge which has affected the particulars in the previous report relating to safety and hazard assessment and shall within thirty days or in such longer time as the Chief Inspector-cum-Facilitator may agree in writing send a copy of the report to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator.

11. Requirements for further information to be sent to the Inspector-cum-Facilitator and Chief Inspector-cum-Facilitator.

Where in accordance with sub-rule (9) and (10), an occupier has to send safety report relating to an industrial activity or isolated storage to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator, the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator may by a notice served on the occupier, required him to provide such additional information as may be specified in the notice and the occupier shall send that information to the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator within ninety days.

12. Preparation of on-site emergency plan by the occupier.

(1) The occupier shall prepare, keep up to date and furnish to the Inspector-cum-Facilitator of Factories or the Chief Inspector-cum-Facilitator and on-site emergency plan containing details specified or guideline declared by the Chief Inspector-cum-Facilitator and detailing how major accidents will be dealt with on the site on which the industrial activity or isolated storage is carried on and that plan shall include the name of the person who is responsible for safety on the site and the names of those who are authorized to take action in accordance with the plan in case of an emergency;

(2) The occupier shall ensure that the emergency plan prepared in accordance with clause (1), takes into account any modification made in the industrial activity or isolated storage and that every person on the site who is concerned with the plan is informed of its relevant provision.

(3) The occupier shall prepare the emergency plan required under clause (1) :- (a) before the commencement of industrial activity or isolated storage. (b) within ninety days of coming into operation of these rules in case of and existing industrial activity or isolated storage.

(4) The occupier shall ensure that a mock drill of the on-site emergency is conducted atleast once in every six months.

(5) A detailed report of the mock drill conducted under clause (4) shall be made immediately available to the Inspector-cum-Facilitator of Factories or the Chief Inspector-cum-Facilitator.

13. Information to be given to persons liable to be affected by a major accident.

(1) The occupier shall take appropriate steps to inform persons out side the site who are likely to be in area which may be affected by a major accident about_

(a) The nature of major accident hazard and,

(b) The safety measures and ‘Dos’ and Don’t’s which should be adopted in the event of major accident.

(2) The occupier shall take the steps required under clause (1) to inform persons about an industrial activity or isolated storage before that activity is commenced, except that in respect of an existing industrial activity or isolated storage, the occupier shall comply with the requirements of clause (1) within ninety days of coming in to operation of these rules.

14. Disclosure of information.

Where for the purpose of the evaluating information notified under sub rule-5 or 7 to 13, the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator or the District Emergency Authority discloses that information to some other person, that other person shall not use that information for any purpose except a purpose of the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator or the District Emergency Authority disclosing it, as the case may be and before disclosing that information the Inspector-cum-Facilitator or the Chief Inspector-cum-Facilitator or the District Emergency Authority, as the case may be, shall inform that person of his obligations under this sub rule.

15. Work Place Environment monitoring shall apply to all factories covered under section 2 1 (za) – “hazardous process” of the Code.

Every employer shall conduct regular work place environment monitoring in the factory as per section 2 1(za) and the work place environment monitoring record shall be maintained as required in Form-48. Permissible exposure limit shall be as per schedule -9.

Explanation: Where a permissible exposure limit is not specified in the applicable schedule, the exposure value specified in the Material Safety Data Sheet (MSDS) of the respective substance shall be considered for compliance.

(Compulsory disclosure of information by occupier)

SCHEDULE 1

Indicative Criteria and List of Chemicals

Part I

INDICATIVE CRITERIA

(a) Toxic Chemicals:

Chemicals having the following values of acute toxicity and which, owing to their physical and chemical properties, are capable of producing major accident hazards,

Sr. No.	Degree of Toxicity	(Medium lethal dose by the oral route toxicity) LD50 (mg/kg body weight of test animals)	Medium lethal dose by the normal route toxicity (dermal LD50 body weight of test animals)	Medium lethal concentration inhalation route (Four hours) LC 50 (mg/1 Inhalation in test animals.
1.	Extremely toxic	1 - 50	1 - 200	0.1 - 0.5
2.	Highly toxic	51 - 500	201 - 20000	0.5 - 2.0

(b) Flammable chemicals:

(i). **Flammable gasses**: Chemicals which in the gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20 C or below;

(ii). **Highly flammable liquids**: Chemicals which have a flash point lower than 23 C and the boiling point of which at normal pressure is above 20 C;

(iii). **Flammable liquids**: Chemicals which have a flash point lower than 65 C and which remain liquid under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazards.

(c) Explosive: Chemicals which may explode under the effect of flame, heat or photo chemical condition, or which are more sensitive to socks or friction than dinitrobenzene.

PART – II

LIST OF HAZARDOUS AND TOXIC CHEMICALS

1. Acetaldehyde
2. Acetic acid
3. Acetic anhydride
4. Acetone
5. Acetone cyanohydrin
6. Acetone thiosemicarbazide
7. Acetonitrile
8. Acetylene
9. Acetylene tetra chloride
10. Acrolein
11. Acrylamide
12. Acrylonitrile
13. Adiponitrile
14. Aldicarb
15. Aldrin

16. Allyl alcohol
17. Allyl amine
18. Allyl chloride
19. Aluminium (powder)
20. Aluminium azide
21. Aluminium borohydride
22. Aluminium chloride
23. Aluminium fluoride
24. Aluminium phosphide
25. Amino diphenyl
26. Amino pyridine
27. Aminophenol-2
28. Aminopterin
29. Amiton
30. Amiton dialate
31. Ammonia
32. Ammonium chloro platinate
33. Ammonium nitrate
34. Ammonium nitrite
35. Ammonium picrate
36. Anabasine
37. Aniline
38. Aniline2,4, 6-Trimethyl
39. Anthraquinone
40. Antimony pentafluoride
41. Antimycin A
42. ANTU
43. Arsenic pentoxide
44. Arsenic trioxide
45. Arsenous trichloride
46. Arsine
47. Asphalt
48. Azinpho-ethyl
49. Azinphos methyl
50. Bacitracin
51. Barium azide
52. Barium nitrate
53. Barium nitride

54. Benzal chloride
55. Benzenamine,3-Trifluoromethyl
56. Benzene
57. Benzene sulfonyl chloride
58. Benzene. 1- (chloromethyl)-4 Nitro
59. Benzene arsenic acid
60. Benzidine
61. Benzidine salts
62. Benzimidazole. 4, 5-Dichloro-2 (Trifluoromethyl)
63. Benzoquinone-P
64. Benzotrichloride
65. Benzoyl chloride
66. Benzoyl peroxide
67. Benzyl chloride
68. Beryllium (Powder)
69. Bicyclo (2, 2, 1) Heptane -2- carbonitrile
70. Biphenyl
71. Bis (2-Chloroethyl) sulphide
72. Bis (Chloromethyl) Ketone
73. Bis (Tert-butyl peroxy) cyclohexane
74. Bis (Terbutylperoxy) butane
75. Bis(2,4, 6-Trimitrophenylamine)
76. Bis (Chloromethyl) Ether
77. Bismuth and compounds
78. Bisphenol-A
79. Bitoscanate
80. Boron Powder
81. Boron trichloride
82. Boron trifluoride
83. Boron trifluoride comp. With methylether, 1:1
84. Bromine
85. Bromine pentafluoride
86. Bromo chloro methane
87. Bromodialone
88. Butadiene
89. Butane
90. Butanone-2
91. Butyl amine tert

92. Butyl glycidal ether
93. Butyl isovalarate
94. Butyl peroxymaleate tert
95. Butyl vinyl ether
96. Butyl-n-mercaptan
97. C.I.Basic green
98. Cadmium oxide
99. Cadmium stearate
100. Calcium arsenate
101. Calcium carbide
102. Calcium cyanide
103. Camphechlor (Toxaphene)
104. Cantharidin
105. Captan
106. Carbachol chloride
107. Carbaryl
108. Carbofuran (Furadan)
109. Carbon tetrachloride
110. Carbon disulphide
111. Carbon monoxide
112. Carbonphenothion
113. Carvone
114. Cellulose nitrate
115. Chloroacetic acid
116. Chlordane
117. Chlorofenvinphos
118. Chlorinated benzene
119. Chlorine
120. Chlorine oxide
121. Chlorine trifluoride
122. Chlormephos
123. Chlormequat chloride
124. Chloroacetal chloride
125. Chloroacetaldehyde
126. Chloroaniline -2
127. Chloroaniline -4
128. Chlorobenzene
129. Chloroethyl chloroformate

130. Chloroform
131. Chloroformyl morpholine
132. Chloromethane
133. Chloromethyl methyl ether
134. Chloronitrobenzene
135. Chlorophacinone
136. Chlorosulphonic acid
137. Chlorothiophos
138. Chloroxuron
139. Chromic acid
140. Chromic chloride
141. Chromium powder
142. Cobalt carbonyl
143. Cobalt Nitrilmethylidyne compound
144. Cobalt (Powder)
145. Colchicine
146. Copper and Compounds
147. Copperoxychloride
148. Coumafuryl
149. Coumaphos
150. Coumatetralyl
151. Crimidine
152. Crotenaldehyde
153. Crotonaldehyde
154. Cumene
155. Cyanogen bromide
156. Cyanongen iodide
157. Cyanophos
158. Cyanothoate
159. Cyanuric fluoride
160. Cyclo hexylamine
161. Cyclohexane
162. Cyclohexanone
163. Cycloheximide
164. Cyclopentadiene
165. Cyclopentane
166. Cyclotetramethyl enetetranitramine
167. Cyclotrimethylen etrinnitranine

168. Cypermethrin
169. DDT
170. Decaborane (1 :4)
171. Demeton
172. Demeton S-Methyl
173. Di-n-propyl peroxydicarbonate (Conc = 80%)
174. Dialifos
175. Diazodinitrophenol
176. Dibenzyl peroxydicarbonate (Conc>= 90%)
177. Diborane
178. Dichloroacetylene
179. Dichlorobenzalkonium chloride
180. Dichloroethyl ether
181. Dichloromethyl phenylsilane
182. Dichlorophenol – 2, 6
183. Dichlorophenol – 2, 4
184. Dichlorophenoxy acetic acid
185. Dichloropropane – 2, 2
186. Dichlorosalicylic acid-3, 5
187. Dichlorvos (DDVP)
188. Dicrotophos
189. Dieldrin
190. Diepoxy butane
191. Diethyl carbamazine citrate
192. Diethyl chlorophosphate
193. Diethyl ethtanolamine
194. Diethyl peroxydicarbonate (Conc=30%)
195. Diethyl phenylene diamine
196. Diethylamine
197. Diethylene glycol
198. Diethylene glycol dinitrate
199. Diethylene triamine
200. Diethleneglycol butyl ether
201. Diglycidyl ether
202. Digitoxin
203. Dihydroperoxypropane (Conc >=30%)
204. Diisobutyl peroxide
205. Dimefox

206. Dimethoate
207. Dimethyl dichlorosilane
208. Dimethyl hydrazine
209. Dimethyl nitrosoamine
210. Dimethyl P phenylene diamine
211. Dimethyl phosphoramidi cyanidic acid (TABUM)
212. Dimethyl phosphorochloridothioate
213. Dimethyl sufolane (DMS)
214. Dimethyl sulphide
215. Dimethylamine
216. Dimethylaniline
217. Dimethylcarbonyl chloride
218. Dimetilan
219. Dinitro O-cresol
220. Dinitrophenol
221. Dinitrotoluene
222. Dinoseb
223. Diniterb
224. Dioxane-p
225. Dioxathion
226. Dioxine N
227. Diphacinone
228. Diphosphoramide octamethyl
229. Diphenyl methane di-isocynate (MDI)
230. Dipropylene Glycol Butyl ether
231. Dipropylene glycolmethyl ether
232. Disec-butyl peroxydicarbonate (Conc.>80%)
233. Disufoton
234. Dithiazamine iodide
235. Dithiobiurate
236. Endosulfan
237. Endothion
238. Endrin
239. Epichlorohydrine
240. EPN
241. Ergocalciferol
242. Ergotamine tartarate
243. Ethanesulfenyl chloride, 2 chloro

244. Ethanol 1-2 dichloracetate
245. Ethion
246. Ethoprophos
247. Ethyl acetate
248. Ethyl alcohol
249. Ethyl benzene
250. Ethyl bis amine
251. Ethyl bromide
252. Ethyl carbamate
253. Ethyl ether
254. Ethyl hexanol -2
255. Ethyl mercaptan
256. Ethyl mercuric phosphate
257. Ethyl methacrylate
258. Ethyl nitrate
259. Ethyl thiocyanate
260. Ethylamine
261. Ethylene
262. Ethylene chlorohydrine
263. Ethylene dibromide
264. Ethylene diamine
265. Ethylene diamine hydrochloride
266. Ethylene flourohydrine
267. Ethylene glycol
268. Ethylene glycol dinitrate
269. Ethylene oxide
270. Ethylenimine
271. Ethylene di chloride
272. Femamiphos
273. Femitrothion
274. Fensulphothion
275. Fluemetil
276. Fluorine
277. Fluoro2-hyrdoxy butyric acid amid salt ester
278. Fluoroacetamide
279. Fluoroacetic acid amide salts and esters
280. Fluoroacetylchloride
281. Fluorobutyric acid amide salt esters

282. Fluorocrotonic acid amides salts esters
283. Fluorouracil
284. Fonofos
285. Formaldehyde
286. Formetanate hydrochloride
287. Formic acid
288. Formoparanate
289. Formothion
290. Fosthiotan
291. Fuberidazole
292. Furan
293. Gallium Trichloride
294. Glyconitrile (Hydroxyacetonitrile)
295. Guanyl-4-nitrosaminoguynyl-1-tetrazene
296. Heptachlor
297. Hexamethyl terta-oxyacyclononate (Conc 75%)
298. Hexachlorobenzene
299. Hexachlorocyclohexan (Lindane)
300. Hexachlorocyclopentadiene
301. Hexachlorodibenzo-p-dioxin
302. Hexachloronapthalene
303. Hexafluoropropanone sesquihydrate
304. Hexamethyl phosphoromide
305. Hexamethylene diamine N N dibutyl
306. Hexane
307. Hexanitrostilbene 2, 2, 4, 4, 6, 6
308. Hexene
309. Hydrogen selenide
310. Hydrogen sulphide
311. Hydrazine
312. Hydrazine nitrate
313. Hydrochloric acid (Gas)
314. Hydrogen
315. Hydrogen bromide
316. Hydrogen cyanide
317. Hydrogen fluoride
318. Hydrogen peroxide
319. Hydroquinone

320. Indene
321. Indium powder
322. Indomethacin
323. Iodine
324. Iridium tetrachloride
325. Ironpentacarbonyl
326. Iso benzan
327. Isoamyl alcohol
328. Isobutyl alcohol
329. Isobutyro nitrile
330. Isocyanic acid 3, 4-dichlorophenyl ester
331. Isodrin
332. Isofluorophosphate
333. Isophorone diisocyanate
334. Isopropyl alcohol
335. Isopropyl chlorocarbonate
336. Isopropyl formate
337. Isopropyl methyl pyrazolyl dimethyl carbamate
338. Juglone (5-Hydroxy Naphthalene-1,4 dione)
339. Ketene
340. Lactonitrile
341. Lead arsenite
342. Lead at high temp (molten)
343. Lead azide
344. Lead styphanate
345. Leptophos
346. Lenisite
347. Liquified petroleum gas
348. Lithium hydride
349. N-Dinitrobenzene
350. Magnesium powder or ribbon
351. Malathion
352. Maleic anhydride
353. Malononitrile
354. Manganese Tricarbonyl cyclopentadiene
355. Mechlor ethamine
356. Mephospholan
357. Mercuric chloride

358. Mercuric oxide
359. Mercury acetate
360. Mercury fulminate
361. Mercury methyl chloride
362. Mesitylene
363. Methaacrolein diacetate
364. Methacrylic anhydride
365. Methacrylonitrile
366. Methacryloyl oxyethyl isocyanate
367. Methanidophos
368. Methane
369. Methanesulphonyl fluoride
370. Methidathion
371. Methiocarb
372. Methonyl
373. Methoxy ethanol (2-methyl cellosolve)
374. Methoxyethyl mercuric acetate
375. Methyacrylol chloride
376. Methyl 2-chloroacrylate
377. Methyl alcohol
378. Methyl amine
379. Methyl bromide (Bromomethane)
380. Methyl chloride
381. Methyl chloroform
382. Methyl chloroformate
383. Methyl cyclohexene
384. Methyl disulphide
385. Methyl ethyl ketone peroxide (Conc.60%)
386. Methyl formate
387. Methyl hydrazine
388. Methyl isobutyl ketone
389. Methyl isocyanate
390. Methyl isothiocyanate
391. Methyl mercuric dicyanamide
392. Methyl Mercaptan
393. Methyl Methacrylate
394. Methyl phencapton
395. Methyl phosphonic dichloride

396. Methyl thiocyanate
397. Methyl trichlorosilane
398. Methyl vinyl ketone
399. Methylene bis (2-chloroaniline)
400. Methylene chloride
401. Methylenebis-4,4(2-chloroaniline)
402. Metolcarb
403. Mevinphos
404. Mezacarbate
405. Mitomycin C
406. Molybdenum powder
407. Monocrotophos
408. Morpholine
409. Muscinol
410. Mustard gas
411. N-Butyl acetate
412. N.-Butyl alcohol
413. N-Hexane
414. N- Methyl-N, 2, 4, 6-Tetranitroaniline
415. Naphtha
416. Nephtha solvent
417. Naphthalene
418. Naphthyl amine
419. Nickel carbonyl/nickel tetracarbonyl
420. Nickel powder
421. Nicotine
422. Nicotine sulphate
423. Nitric acid
424. Nitric oxide
425. Nitrobenzene
426. Nitrocellulose (dry)
427. Nitrochlorobenzene
428. Nitrocyclohexane
429. Nitrogen
430. Nitrogen dioxide
431. Nitrogen oxide
432. Nitrogen trifluouide
433. Nitroglycerine

434. Nitropropane-1
435. Nitropropane-2
436. Nitroso dimethyl amine
437. Nonane
438. Norbormide
439. O-Cresol
440. O-Nitro Toluene
441. O-Toludine
442. O-Xylene
443. O/P Nitroaniline
444. Oleum
445. OO Diethyl S ethyl suph. methyl phos
446. OO Diethyl S propythio methyl phosdithioate
447. OO Diethyl s ethtylsulphinyl methylphosphorothioate
448. OO Diethyl s ethylsulphonyl methylphosphorothioate
449. OO Diethyls ethylthiomethylphospho-rothioate
450. Organo rhodium complex
451. Orotic acid
452. Osmium tetroxide
453. Oxabain
454. Oxamyl
455. Oxetane, 3, 3-bis(chloromethyl)
456. Oxidiphenoxarsine
457. Oxy disulfoton
458. Oxygen (liquid)
459. Oxygen difluoride
460. Ozone
461. P-nitrophenol
462. Paraffin
463. Paraoxon (Diethyl 4 Nitrophenyl phosphate)
464. Paraquat
465. Paraquat methosulphate
466. Parathion
467. Parathion methyl
468. Paris green
469. Penta borane
470. Penta chloro ethane
471. Penta chlorophenol

472. Pentabromophenol
473. Pentachloro naphthalene
474. Pentadecyl-amine
475. Pentaerythaiotol tetranitrate
476. Pentane
477. Pentanone
478. Perchloric acid
479. Perchloroethylene
480. Peroxyacetic acid
481. Phenol
482. Phenol, 2, 2-thiobis (4, 6-Dichloro)
483. Phenol, 2, 2-thiobis (4 chloro 6-methyl phenol)
484. Phenol, 3-(1-methyl ethyl) methylcarbamate
485. Phenyl hydrazine hydrochloride
486. Phenyl mercury acetate
487. Phenyl silatrane
488. Phenyl thiourea
489. Phenylene P-diamine
490. Phorate
491. Phosazetin
492. Phosfolan
493. Phosgene
494. Phosmet
495. Phosphamidon
496. Phosphine
497. Phosphoric acid
498. Phosphoric acid dimethyl (4-methyl thio)phenyl
499. Phosphorthioic acid dimethyl S(2-Bis) Ester
500. Phosphorothioic acid methyl (ester)
501. Phosphorothioic acid, OO Dimethyl S-(2-methyl)
502. Phosphorothioic, methyl-ethyl ester
503. Phosphorous
504. Phosphorous oxychloride
505. Phosphorous pentaoxide
506. Phosphorous trichloride
507. Phosphorous penta chloride
508. Phthalic anhydride
509. Phylloquinone

510. Physostignine
511. Physostignine salicylate (1:1)
512. Picric acid (2, 4, 6- trinitrophenol)
513. Picrotoxin
514. Piperdine
515. Piprotal
516. Pirinifos-ethyl
517. Platinous chloride
518. Platinum tetrachloride
519. Potassium arsenite
520. Potassium chlorate
521. Potassium cyanide
522. Potassium hydroxide
523. Potassium nitride
524. Potiassium nitrite
525. Potassium peroxide
526. Potassium silver cyanide
527. Powdered metals and mixtures
528. Promecarb
529. Promurit
530. Propanesultone
531. Propargyl alcohol
532. Propargyl bromide
533. Propen-2-chloro-1 ,3-diou diacetate
534. Propiolactone beta
535. Propionitrile
536. Propionitrile, 3-chloro
537. Propiophenone, 4-amino
538. Propyl chloroformate
539. Propylene dichloride
540. Propylene glycol, allylether
541. Propylene imine
542. Propylene oxide
543. Prothoate
544. Pseudosumene
545. Pyrazoxon
546. Pyrene
547. Pyridine

548. Pyridine, 2-methyl-3-vinyl
549. Pyridine, 4-nitro-1-oxide
550. Pyridine, 4-nitro-1-oxide
551. Pyriminil
552. Quinaliphos
553. Quinone
554. Rhodium trichloride
555. Salcomine
556. Sarin
557. Selenious acid
558. Selenium Hexafluoride
559. Selenium oxychloride
560. Semicarbazide hydrochloride
561. Silane (4-amino butyl) diethoxy-meth
562. Sodium
563. Sodium anthra-quinone-1-sulphonate
564. Sodium arsenate
565. Sodium arsenite
566. Sodium azide
567. Sodium cacodylate
568. Sodium chlorate
569. Sodium cyanide
570. Sodium fluoro-acetate
571. Sodium hydroxide
572. Sodium pentachloro-phenate
573. Sodium picramate
574. Sodium selenate
575. Sodium selenite
576. Sodium sulphide
577. Sodium tellorite
578. Stannane acetoxy triphenyl
579. Stibine (Antimony hydride)
580. Strychnine
581. Strychnine sulphate
582. Styphinic acid (2, 4,6-trinitroresorcinol)
583. Styrene
584. Sulphotec
585. Sulphoxide, 3-chloropropyl octyl

586. Sulphur dichloride
587. Sulphur dioxide
588. Sulphur monochloride
589. Sulphur tetrafluoride
590. Sulphur trioxide
591. Sulphuric acid
592. Tellurim (powder)
593. Tellurium hexafluoride
594. TEPP (Tetraethyl pyrophosphate)
595. Terbufos
596. Tert-Butyl alcohol
597. Tert-Butyl peroxy carbonate
598. Tert-Butyl peroxy isopropyl
599. Tert-Butyl peroxyacetate (Conc >=70%)
600. Tert-Butyl peroxypivalate (Conc >=77%)
601. Tert-Butyl peroxyiso-butyrate
602. Tetra hydrofuran
603. Terta methyl lead
604. Tetra nitromethane
605. Tetra-chlorodibenzo-p-dioxin, 1, 2, 3, 7, 8(TCDD)
606. Tetraethyl lead
607. Tetrafluoriethyne
608. Tetramethylene disulphotetramine
609. Thallic oxide
610. Thallium carbonate
611. Thallium sulphate
612. Thallous chloride
613. Thallous malonate
614. Thallous sulphate
615. Thiocarbazide
616. Thiocynamicacid, 2(Benzothiazolyethio) methyl
617. Thiofamox
618. Thiometon
619. Thionazin
620. Thionyl chloride
621. Thiophenol
622. Thiosemicarbazide

623. Thiourea (2 chloro-phenyl)
624. Thiourea (2-methyl phenyl)
625. Tirpate (2,4-dimethyl-1,3-di-thiolane)
626. Titanium powder
627. Titanium tetra-chloride
628. Toluene
629. Toluene -2,4-di-isocyanate
630. Toluene 2,6-di-isocyanate
631. Trans-1,4-di chloro-butene
632. Tri nitro anisole
633. Tri (Cyclohexyl) methylstannyl 1,2,4 triazole
634. Tri (Cyclohexyl) stannyl-1H-1, 2, 3-triazole
635. Triaminotrinitrobenzene
636. Triamphos
637. Triazophos
638. Tribromophenol 2, 4, 6
639. Trichloro napthalene
640. Trichloro chloromethyl silane
641. Trichloroacetyl chloride
642. Trichlorodichlorophenylsilane
643. Trichloroethyl silane
644. Trichloroethylene
645. Trichloromethane sulphenyl chloride
646. Trichloronate
647. Trichlorophenol 2, 3, 6
648. Trichlorophenol 2, 4, 5
649. Trichlorophenyl silane
650. Trichlorophon
651. Triethoxy silane
652. Triethylamine
653. Triethylene melamine
654. Trimethyl chlorosilane
655. Trimethyl propane phosphite
656. Trimethyl tin chloride
657. Trinitro aniline
658. Trinitro benzene
659. Trinitro benzoic acid
660. Trinitro phenetole

661. Trinitro-m-cresol
662. Trinitrotoluene
663. Tri-orthocreysyl phosphate
664. Triphenyl tin chloride
665. Tris(2-chloroethyl)amine
666. Turpentine
667. Uranium and its compounds
668. Valino mycin
669. Vanadium pentaoxide
670. Vinyl acetate mononer
671. Vinyl bromide
672. Vinyl chloride
673. Vinyl cyclohexane dioxide
674. Vinyl fluoride
675. Vinyl norbornene
676. Vinyl toluene
677. Vinyledene chloride
678. Warfarin
679. Warfarin Sodium
680. Xylene dichloride
681. Xylidine
682. Zinc dichloropentanitrile
683. Zink phosphide
684. Zirconium & compounds

SCHEDULE - 2

(a) The threshold quantities set out below relate to each installation or group of installation belonging to the occupier where the distance between installations is not sufficient to avoid, in foreseeable circumstances any aggravation of major accident hazards. These threshold quantities apply in any case of each of the installations belonging to the same occupier where the distance between the installations is less than 500 meters.

(b) For the purpose of determining the threshold quantity of a hazardous chemical at an isolated storage, account shall also be taken of any hazardous chemical which is: -

(i) In that part of any pipelines under the control of the occupier having control of the site, which is within 500 meters of that site and connected to it.

(ii) at any other site under the control of the occupier any part of the boundary of which is 500 meters of the said site, and;

(iii) In any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 meters of it.

But no account shall be taken of any hazardous chemical, which is a vehicle, vessel, aircraft or hovercraft for transporting it.

Sr. No.	Chemicals	Threshold Quantities (tones)	
		For appliances of Sub-Rules 4, 5 and 7 & 8	For application of Sub-Rule 9 to 13.
Col. 1	Column -2	Column-3	Column4
1.	Acryonitrile	350	5.000
2.	Ammonia	60	600
3.	Ammonium Nitrate (a)	350*	2500*
4.	Ammonium Nitrate fertilizers (b)	1250	10000
5.	Chlorine	10	25
6.	Flammable gases as defined in Table 1, paragraph1, paragraph (b)(i)	50	300
7.	Highly flammable liquids as defined in Table 1, paragraph (b) (ii)	10000	10000
8.	Liquid oxygen	200	2000
9.	Sodium chlorate	25	250
10.	Sulphur dioxide	20	500
11.	Sulphur trioxide	15	100
12	Carbonyl Chloride	0.750	0.750
13	Hydrogen Sulphide	5	50
14	Hydrogen Flouride	5	50
15	Hydrogen Cyanide	20	200
16	Carbon di-sulphide	20	200
17	Bromine	50	500
18	Ethylene Oxide	50	500
19	Propylene Oxide	5	50
20	2 – Propenal (Acrolein)	20	200
21	Bromomethane (Methyl bromide)	20	200
22	Methyl Isocynate	0.150	0.150
23	Tetraethyl Lead or Tetramethyl Lead	5	50
24	1, 2 Dibromoethane (Ethylene dibromide)	5	50
25	Hydrogen Chloride (liquefied Gas)	25	250
26	Diphenyl methane di-isocynate (MDI)	20	200
27	Toluene di-isocynate (TDI)	20	100

Foot notes-

(a) This applies to ammonium nitrate and mixture of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28 percent by weight and to aqucoussolutions of ammonium nitrate where the concentration of ammonium nitrate is greater then 90 percent by weight.

(b) This applies to straight ammonium nitrate fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28 percent by weight. (A compound fertilizer contains ammonium nitrate together with phosphate and / or potash.)

SCHEDULE – 3

(a) The quantities set out below relate to each installation or group of installations belonging to the same occupiers where the distance between the installations is not sufficient to avoid in foreseeable circumstances, any aggravation of major accident hazardous. These quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 meters.

(b) For the purpose of determining the quantity of a hazardous chemical in an industrial installation, account shall also be taken of any hazardous chemical which is:

(i) In that part of any pipelines under the control of the same occupier having control of the site, which is within 500 meters of that site and connected to it:

(ii) At any other site under the control of the same occupier any part of the boundary of which is within 500 meters of the said site; and

(c) In any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 meters of it. but no account shall be taken of any hazardous chemical, which is in a vehicle, vessel, aircraft or hovercraft used for transporting it.

Part I

NAMED CHEMICALS

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
Group 1-Toxic Chemicals				
1.	Aldcarb	100 Kg.		116-06.3
2.	4-Aminidipheny	1 kg.		92-67-1
3.	Alton	1 kg.		78-53-5
4.	Anabasine	100 kg.		494-52-0
5.	Arsenic pentoxide, Arsenic (v) acid & salts	500 kg.		
6.	Arsenic trioxide Arsenious (iii) Acid & salts	100 kg.		
7.	1 rsine (Arsine(Arsenic hydride)	10 kg.		7784-42-1
8.	Azinphos-rthy	100 kg.		2642-71-9
9.	Azinphos-mehty	100 kg.		86-50-0
10.	Benzidine	1 kg.		92-87-5
11.	Benakine Salts	1 kg.		
12.	Beryllium (powders, Compounds)	10 kg.		
13.	Bis (2-chioroethyl) sulphide	1 kg.		505-60-2
14.	Bis (chioromethyl) ether	1 kg.		542-88-1
15.	Carbofuran	100 kg.		1563-66-2
16.	Carbophenthion	100 kg.		786-19-6
17.	Chlorfenvnphos	100 kg.		470-90-6
18.	4-(chiorofomyl) Morphollne	1 kg.		15159-40-7
19.	Chlotomethyetherl	1 kg.		107-30-2

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
20.	Cobalt metal, oxides, Carbonates, Sulphides As powders.	1 t		
21.	Crimidine	100 kg.		535-89-7
22.	Cyanthoate	100 kg.		3734-95-0
23.	Cyloheximide	100 kg.		66-81-9
24.	Demeton	100 kg.		8065-48-3
25.	Diallfos	100 kg		10311-84-9
26.	Co-diethyl, S-ethyisuphnylmethy Phosphorthloate	100 kg.		2588-05-8
27.	Co-diethyl, S-ethyisuphnylmethy Phosphorthloate	100 kg.		2588-06-9
28.	Co-diethyl, S-ethyisuphnylmethy Phosphorthloate	100 kg.		2600-69-3
29.	Co-diethyl, S-ethyisuphnylmethy Phosphorthloate	100 kg.		78-52-4
30.	Co-diethyl, S-ethyisuphnylmethy Phosphorthloate	100 kg.		3309-68-0
31.	Dime fox	100 kg.		115-26-4
32.	Dimethyylcarbamonyl chloride	1 kg.		79-44-7
33.	Dimethylnitosamine	1 kg.		62-75-9
34.	Dimethyl Phosphoramidocyanidicaxid	1 t		63917-41-9
35	Diphacinone	100 kg.		82-66-6
36.	Disulfide	100 kg.		298-04-4
37.	EPN	100 kg.		2104-64-5
38.	Ethion	100 kg.		563-12-2
39.	Fensulfothion	100 kg.		115-90-2
40.	Fluently	100 kg.		4301-50-2
41.	Fluoroacetic acid	1 kg.		144-49-0
42.	Fluorocatle acid. Salt	1 kg.		
43.	Fluoroacetic acid, esters	1 kg.		
44.	Fluroacetic acid, amiders	1 kg.		
45.	4-fluorobutyric acid	1 kg.		462-23-7
46.	4-fluorobutyric acid, salts			
47.	4-fluorobutyric, esters	1 kg.		
48.	4-fluorobutyric acid, amides	1 kg.		
49.	4-fluorobutyric acid	1 kg.		37759-72-1
50.	4-fluorobutyric acid, salts	1 kg.		
51.	4-fluorobutyric esters	1 kg.		
52.	4-fluorobutyric, amides	1 kg.		
53.	4-fluoro –2hydroxy-Butyric acid	1 kg.		

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
54.	4-fluoro-2, Hydro butyric acid, salts	1 kg.		
55.	4-fluoro –2hydroxy-Butyric acid, esters	1 kg.		
56.	4-fluoro –2hydroxy-Butyric acid, amides	1 kg.		
57.	Glycolonitrile(Hydroxyacctonitrille)	100 kg.		107-16-4
58.	1,2,3,7,8,9,-Hexachiorodibenzo p-dioxin	100 kg.		19408-74-3
59.	Hexamethyiphoaphoramide, Sphoramids	1 kg.		680-31-9
60.	Hydrogen selenid	10 kg.		7783-07-5
61.	Isobenzan	100 kg.		297-78-9
62.	Isodrin	100 kg.		465-73-6
63.	Jug lone (5-Hydroxynaphthalene-1,4-dione	100 kg.		481-39-0
64.	4.4’ – Methyleneble (2-chloroaniline)	10 kg.		101-14-4
65.	Methy/Isocyanate	150 kg.	150 kg.	624-83-9
66.	Mevinphose	100 kg.		7786-34-7
67.	2-Naphhthylamine	1 kg.		91-59-8
68.	Nickel metal, Oxides, carbonates, Sulphide, as powder	1 t.		
69.	Nickel Tetracarbony	10 kg.		13463-39-3
70.	Oxydisulfoton	100 kg.		2497-07-6
71.	Oxygen diffuoride	10 kg.		7783-41-7
72.	Para Oxon (diethyl) 4-nitrophenyl (Phosphate)	100 kg.		311-45-5
73.	Parathion	100 kg.		56-38-2
74.	Pacathion-methyl	100 kg.		298-00-0
75.	Pentaboranc	100 kg.		19624-22-7
76.	Phorate	100 kg.		298-02-2
77.	Phosacction	100 kg.		4104-14-7
78.	Phosgene(Cartbony) Chloride	750 kg.	750 kg.	75-44-5
79.	Phosphamidon	100 kg.		13171-21-6
80.	Phospine(Hydrogen phosphide)	100 kg.		7803-51-2
81.	Promurit(1-(3,4-Dichlorophenyl)-3-triazenethio Cariboxa amide)	100 kg.		5836-73-7
82.	1,3-Propanesuiltone	1 kg.		1120-71-4
83.	1-propane-2 chloro-1, 3-diol, diacetate	10 kg.		10118-72-6
84.	Pyrazoxon	100 kg.		108-34-9
85.	Selenium hexaffuoride	10 kg.		7783-79-1
86.	Sodium selenite	100 kg.		10102-18-8

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
87.	Stabine (Antimony hydride)	100 kg.		7803-52-3
88.	Sulphoto	100 kg.		3689-24-5
89.	Sulphur dichloride	1 t		10545-99-0
90.	Tellurium Hexaflouride	100 kg.		7783-80-4
91.	TEPP	100 kg.		107-49-3
92.	2,3,7,8-'Tetrachlorodibenzo, P-dioxin (TcDD)	1 kg.		1746-01-6
93.	Tetramethylenedisul-Photetramine	1 kg.		80-12-6
94.	Thionazin	100 kg.		297-97-2
95.	Tirpate (2,4-Dimenthyl 1, 3-dithiolane, 2-carboxaldehyde-o-methyl carbomoyloxime)	100 kg.		26419-73-8
96.	Trichlomethanesulphenyl chloride	100 kg.		594-42-3
97.	1-Tri (cyclohexyl) stanny1-1H-1,2,4-triazole	100 kg.		41083-11-8
98.	Trichienmelamine	10 kg.		51-18-3
99.	Wartarin	100 kg.		81-81-2
	Group 2- Toxic chemicals (Quantity > 1 tonne)			
100	Acetone cyanohydrins(2-Cynopropan –2-01)	200 t		75-86-5
101	Acroieln (2-Propenal)	20 t		107-02-8
102	Acrylonitrelle	20 t	200 t	107-13-1
103	Ally alcohol (2-Propen-1-01)	200 t		107-18-6
104.	Allylaine	200 t		107-11-9
105.	Ammonia	50 t	500 t	7664-41-7
106.	Bromine	40 t		7726-95-6
107.	Carbon disulphide	20 t	200 t	75-15-0
108.	Chlorine	10 t	25 t	7782-50-5
109.	Diphyenl methane, di-isocyanate (MDI)	20 t		101-68-8
110.	Ethylene dibromide(1,2-Dibromomethane)	5 t		106-93-4
111.	Ethyienelmine	50 t		151-56-4
112.	Formaldehyde(Concentration = 90%)	5t		50-00-0
113.	Hydrogen chloride(Liquefied gas)	25 t	250 t	7647-01-0
114.	Hydrogen cyanide	5 t	20 t	74-90-8
115.	Hydrogen fluoride	5 t	50 t	7664-39-3
116.	Hydrogen Sulphide	5 t	50 t	7783-06-4
117.	Methyl bromide (Bromomethane)	20 t		74-83-9

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
118.	Nitrogen oxide	50 t		11104-93-1
119.	Propylene mine	50 t		75-55-7
120.	Sulphur Dioxide	20 t	250 t	7446-09-5
121.	Sulphur trioxide	15 t	75 t	7446-11-9
122.	Tetraethyl lead	5 t		78-00-2
123.	Tetraethyl lead	5 t		75-74-1
124.	Toluene di-isocyabate (TDI)	101		584-84-9
	Group 3 Highly reactive chemicals			
125.	Acetylene (ethyne)	5 t		74-86-2
126.	a. Ammonium nitrate (1), b. Ammonium nitrate in the form of fertilizer (2)	350 t 1,250 t	2500 t	6484-52-2
127.	2,2 Bis (tert-butyl peroxy) butane (concentration >=70%)	5 t		2167-23-9
128.	1,1 Bis(tert-butyl peroxy) cyclohexane (concentration >=80%)	5 t		3006-86-8
129.	Tert-butyl peroxyacetate) (concentration >=70%)	5 t		107-71-1
130.	Tert-butyl peroxysobutyrate (Concentration >=80%)	5 t		109-13-7
131.	Tert-butyl Peroxyisopropyl Carbonate(Concentration >=80%)	5 t		2372-21-6
132.	Tert-butyl peroxymaleate (Concentration >=80%)	5 t		1931-62-0
133.	Tert-butylperoxypivalate (Concentration >=77%)	50 t		927-07-1
134.	Dibenzylperoxydicarbinate (Concentration >=90%)	5 t		2144-45-8
135.	Did-sec-butyl Peroxdicarbonate (Concentration >=80%)	5 t		19910-65-7
136.	Diethyl Peroxydicarbonate (Concentration >=30%)	50 t		14666-78-5
137.	2,2-Dihydroperoxyoropana (Concentration >=30%)	5 t		2614-76-8
138.	Dl-isobutyl peroxide (Concentration >=50%)	50 t		3437-84-1
139.	Dl-n-propyl Peroxydlcarbonate (Concentration >=80)	5 t		16066-38-9

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
140.	Ethylene oxide	5 t	50 t	75-21-8
141.	Ethyl nitrate	50 t		625-58-1
142.	3.3.6.6.9.9. Hex methyl -1,2,4,5-Tetroxacyclonane (Concentration >= 75%)	50 t		22937-33-7
143.	Hydrogen	2 t	50 t	1333-74-0
144.	Liquid Oxygen	200 t		7782-44-7
145.	Methyl ethyl ketone Peroxide (Concentration >=60%)	5 t		1338-23-4
146.	Methyl isobutyl ketone peroxide (Concentration >=60%)	50 t		37206-20-5
147.	Peracetic acid (Concentration >=60%)	50 t		79-21-0
148.	Propylene oxide	5 t		75-56-9
149.	Sodium chlorate	25 t		7775-09-9
	Group -4 Explosive Chemicals			
150.	Barium Azide	50 t		18810-58-7
151.	Bis (2,4,6 –Trinitophemy) amine	50 t		131-73-7
152.	Chlorotrinitrobenzene	50 t		28260-61-9
153.	Cellulose nitrate (containing) >12.6 % Nitrogen	50 t		9004-70-0
154.	Cyclotetramenthylenetetranitramine	50 t		2691-41-0
155.	Cyclotrimethylenetri nitro mine	50 t		121-82-4
156.	Diazodinitrophenol	10 t		7008-81-3
157.	Diethylene glycol dinitrate	10 t		693-21-0
158.	Dinitrophenol, salts	50 t		
159.	Ethylene glycol dinitrate	10 t		628-96-6
160.	1-Guany-4-nitrosamineoguanyl-l-tetrazene	10 t		109-27-3
161.	2.2’, 4.4’, 6.’-Hexanitrostilbene	50 t		20062-22-0
162.	Hydrazine nitrate	50 t		13464-97-6
163.	Lead azide	50 t		13424-46-9
164.	Lead styphnate (lead 2,4,6-Trinitroredorcinoxide	50 t		15245-44-0
165.	Mercury fulminate	10 t		628-86-4
166.	N-methyl-N, 2,4, 6 Tetranitroanline	50 t		479-45-8
167.	Nitroglycerine	10 t	10 t	55-63-0
168.	Pentacrythritol tetra nitrate	50 t		78-11-5
169.	Picric acid-2, 4, 6 (Trinitrophenol)	50 t		88-89-1

Sr. No.	Chemical	Threshold Quantity		CAS Number
		For application of Sub rule 4, 6, 7, 11 & 12	For Application of sub-rules 8 to 10	
(1)	(2)	(3)	(4)	(5)
170.	Sodium Picramate	50 t		831-52-7
171.	Styphnic acid (2, 4, 6-Trinitroresorcinol)	50 t		82-71-3
172.	1, 3, 5-Trinitrobenezene	50 t		3058-38-6
173.	Trinitroaniline	50 t		26952-42-1
174.	2, 4, 6-Trinitroanisole	50 t		606-35-9
175.	Trinitrobenzene	50 t		25377-32-6
176.	Trinitrobenzoic acid	50 t		35860-50-5
177.	Trinitrocresol	50 t		28905-71-7
178.	2, 4, 6-Trinitrophenetole	50 t		4732-14-3
179.	2, 4, 6-Trinitrotoluene	50 t	50 t	118-96-7

PART – II CLASSES OF CHEMICALS NOT SPECIFICALLY NAMED IN PART – I

Sr. No.	Classes of chemicals	Threshold Quantity	
		For application of Rules 5, 7, 8, 13 and 15	For application of Rules 10 to 12.
(1)	(2)	(3)	(4)
	Group – 5 Flammable Chemicals		
1.	**Flammable Gases:** Chemicals which in gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20 degree C or below:	15 t	200 t
	Highly flammable liquids:		
2.	Chemicals which have a flash point lower than 23 degree C and the boiling point of which at normal pressure is above 20 degree C;	1000 t	50000 t
	Flammable liquids:		
3.	Chemicals which have a flash point lower than 65 degree C and which remain liquid under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazard.	25 t	200 t

Footnotes:

1. This applies to ammonium nitrate and mixture of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 20 % by weight and aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90 % by weight.

2. This applies to straight ammonium fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28 % by weight (a compound fertilizer contains ammonium nitrate together with phosphate and / or potash).

* CAS number (Chemical abstracts Service Number) means the number assigned to the chemical by the Chemical Abstracts Service.

SCHEDULE 4

Industrial Installation within the meaning of sub-rule 1(b)

1. Installation for the production, Processing for treatment of organic or Inorganic chemicals using for this purpose, among others:
   a. Alkylation
   b. Amlnation by amonolysis
   c. Carbonization
   d. Condensation
   e. Dehydrogenation
   f. Esterification
   g. Halogenations & manufacture of halogens
   h. Hydrogenation
   i. Hydrolysis
   j. Oxidation
   k. Polymerization
   l. Sulphmarization, Sulphonation
   m. Desulphurization, manufacture and transformation of sulphur containing compounds
   n. Nitration and manufacture of nitrogen containing compounds
   o. Manufacture of phosphorous containing compounds
   p. Formulation of pesticides and of pharmaceutical products-pestcies,
   q. Distillation
   r. Extracting
   s. Solvation
   t. Mixing
2. Installations for distillation, refining or other processing of petroleum or petroleum-products.
3. Installations for the total or partial disposal of solid or liquid chemicals by incineration or chemical decomposition.
4. Installation for the production, processing, or treatment of energy for example, LPG, LNG, SNG.
5. Installations for the dry distillation of coal or lignite.
6. Installations for the production of metals or non-metals by a wet process or by means of electrical energy.

SCHEDULE –5

Format of a Safety Data Sheet

(*See Rule 95- 2 (2) and (3*)

1. CHEMICAL IDENTITY

Chemical Name :		Chemical Classification:	
Synonyms :		Trade name:	
Formula :		C.A.S.No:	U.N.No.
	Shipping Name Codes/Label		Hazchem No.:

Regulated Identification			
	Hazardous Waste I.D. No.:		
Hazardous Ingredients	C.A.S. No	Hazardous Ingredients	C.A.S. No
	1	3	
	2	4	

2. PHYSICAL AND CHEMICAL DATA

BOLLING Range/Point ºC:	PhysicalState:	Appearance:
Melting/Freezing Point: ºC	Vapour Pressure at 35 ºC: mm Hg	Odor :
Vapor Density (Air=1)	Solubility in water at 30 ºC	Others:
Specific Gravity: (Water=1	pH	

3. FIRE AND EXPLOSION HAZARD DATA

Flammability Yes/No	LEL	% flash Point oC	Auto ignition oC Temperature
TDG Flammability	UEL	% flash Point oC	
Explosion Sensitivity to Impact:		Explosion Sensitivity to Static Electricity:	Hazardous combustion Products:
Hazardous	Explosive Material	Corrosive Material	
Polymerization			
Combustible Liquid			
Flammable Material	Oxidizer	Others	
Pyrophoric Material	Organic	Peroxide	

4. REACTIVITY DATA

Chemical Stability:
Incompatibility with other Material:
Reactivity:
Hazardous Reaction Products:

5. HEALTH HAZARDS DATA

Routes of Entry:			
Routes of Entry:			
Effects of Exposure/Symptoms:			
Emergency Treatment:			
TLV (ACGIH): ppm mg/m^3		STEL: ppm mg/m^3	
Permissible Exposure Limit LD-50: ppm mg/m^3		Odor Threshold LD-50: ppm mg/m^3	
NFPA Hazard Signale	Health Flammability	Stability	SPECIAL

6. SAFE USAGE DATA

Ventilation	General / Mechanical Local Exhaust
Equipment required	Eye (Specify) Respiratory (specify) Gloves (specify) Clothing (specify) Others (specify)
Precautions	Handling and Storage Others (specify)

7. EMERGENCY RESPONSE DATA

Fire	Fire Extinguishing Media
	Special Procedures:
	Unusual Hazards:
Exposure (Inhalation, skin & eye contents ingestion)	First Aid Measures:
	Antidotes/Dosages:
Spills	Steps to be taken:

8. ADDITIONAL INFORMATION/REFERENCES

9. MANUFACTURE/SUPPLIERS DATA

Name of Firm	Contact Person in Emergency:
Mailing Address	
Telephone/Telex Nos.	Local Bodies involved
Telephonic Address	
	Standard Packing
	Tram card detail/Ref.
	Others.

10. DISCLAIMER

Information contained in this material data sheet is believed to be reliable but no representation; guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacture/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured/handled or sold by him as the case may be; the Government makes no warranties, expressed or implied, in respect of the adequacy of this document for any particular purpose.

SCHEDULE -6

Information to be furnished Regarding Notification of a Major Accident

Report number _____ Of the Particular Accident

1. General data

   (a) Name of the site

   (b) Name and address of the occupier

Also, state the telephone/telex number)

(c) (i) Registration number

(ii) License number

(As may have been allotted under any status)

Applicable to the site; e.g. the Factories Act)

(d) (i) Nature of industrial activity (Mention what is actually manufactured, stored etc.)

(ii) National Industrial Classification, 1987 at the Four digit level. | | | | |

2. Type of major accident

Explosion of Fire | | Emission | | hazardous chem. | |

3. Description of the major accident

a. Date, Shift and hour of the accident ----------

b. Department/Section and exact Place Where the accident look place---------- ----------

c. The process/operation undertaken in the Department/Section where the accident took place. (Attach a flow chart, if necessary.) ---------- ----------

d. The circumstances of the accident and the hazardous chemical involved: ---------- ----------

4. Emergency measures taken and measures envisaged to be alleviate short-term effects of the Accident: ---------- ---------- ----------

5. Cause of the major accident Known

(to be specified) |

Not known |

Information will be supplied As soon as possible |

6. Nature and extent of damage

a. within the establishment

Casualties

killed

killed

poisoned

persons exposed to the major accident

material damage	
damage is still present	
danger no longer exists	

c Outside the establishment

	casualties
	killed
	injured
	poisoned
	Persons exposed to the major accident

Material damage	
Damage to environment	
Damage in still present	
Danger no longer exists	

7. Data available for assessing the Effects of the accident on persons and environment: ----------

8. Steps already taken or envisaged

   a to alleviate medium or long term effects of the accident:

   b to prevent recurrent of similar major accident:

   c any other relevant information.

SCHEDULE -7

INFORMATION TO BE FURNISHED FOR THE NOTIFICATION OF ACTIVITIES/SITES

Particulars to be included in a notification of site

1. The Name and address of the occupier making notification:
2. The full Postal address of the site where the notifiable industrial activity will be carried on:
3. The area of the site covered by the notification and of any adjacent site, which is required to be taken into account by virtue of Table 2 (b) and Table 3 (b):
4. The date on which it is anticipated that the notifiable industrial activity will commence or if it has already commenced a statement to that effect:

5. The name and maximum quantity liable to be on the site of each hazardous chemical for which notification is being made:

Sr. No.	Name of Chemical	Type of hazard (flammable / toxic / corrosive/ highly reactive)	Maximum quantity to be stored	Mode of storage	Mode of transport

6. Organization structure, namely organization diagram for the proposed industrial activity and set up for ensuring safety and health:

7. Information relating to the potential for major accident namely---

   a. Identification of major accident hazards:

   b. The condition of events which could be significant in bringing one about:

   c. A brief description of the measures taken:

8. Information relating to the site namely---

   a. A map of the site and its surrounding area to a scale large enough to show any features that may be significant in the assessment of the hazard or risk associated with the sites;

      (i) Area likely to be affected by the major accident:

      (ii) Population distribution in the vicinity:

   b. A scale plan of the site showing the location and quantity of all significant inventories of the hazardous chemicals;

   c. A description of the processes or storages involving the hazardous chemicals, the maximum amount of such a hazardous chemical in the given process or storage and an indication of the conditions under which it is normally held;

   d. The maximum number of persons likely to be present on site:

9. The arrangement for training of workers and equipment necessary to ensure safety of such workers:

SCHEDULE -8

INFORMATION TO BE FURNISHED IN A SAFETY REPORT

1. The name and address of the person furnishing the information.

2. Description of the industrial activity namely. —

   a. Site

   b. Construction design

   c. Protection zones (explosion protection, separation distances)

   d. Accessibility of plant.

   e. Maximum number of person working on the site and particularly of those persons exposed to the hazard.

3. Description of the processes, namely—

   a. Technical purpose of the Industrial activity,

   b. Basic principles of the technological process.

   c. Process description

   d. Process hazard and safety – related data for the individual process stages.

   e. Safety-related types of utilities.

4. Description of the hazardous chemicals, namely—

a. Chemical (Quantities, physical and chemical properties, safety related data, explosive limits, flash-point, thermal stability, toxicological data and threshold limit value, lethal concentrations),

b. The form in which the chemicals may occur or into which they may be transformed in the event of abnormal conditions,

c. The degree of purity of the hazardous chemical.

5. Information on the Preliminary / Process Hazard Analysis namely –

a. Type of accident,

b. System elements or for-seen events that can lead to a major accident

c. Hazards.

d. Safety-relevant components.

6. Description of safety-relevant units, among others;

a. Special design criteria,

b. Controls and alarms,

c. Pressure relief system,

d. Quick acting valves,

e. Collection tanks/dump tanks,

f. Sprinkler systems,

g. Fire protection

7. Information on the hazard assessment, namely—

a. Identification of hazards,

b. The causes of accidents,

c. Assessment of hazards according to their occurrence frequency,

d. Assessment of accident consequences,

e. Safety systems,

f. Known accident history.

8. Description of information on organizational systems used to carry on industrial activity safely, namely—

a. Maintenance and inspection schedules,

b. Guidelines for the training of personnel.

c. Allocation and delegation of responsibility for plant safety,

d. Implementation of safety procedures.

9. Information on assessment of the consequences of major accidents, namely-

a. Quantitative and Qualitative Risk Assessment of the possible release of hazardous chemical or of energy,

b. Possible dispersion of released chemicals (size of the affected area, health effects, property damaged)

10. Information on the mitigation of major accidents namely—

a. Fire brigade;

b. Alarm systems;

c. Emergency plant containing system of organization used to fight emergency, the alarm and the communication routes, guidelines for fighting for emergency, examples of possible accidents sequences,

d. Co-ordination with the District Collector of the District Emergency Authority and it's off site emergency plan.

e. Notification of the nature and scope of the hazard in the event of an accident.

f. Antidotes in the event of a release of a hazardous chemical.

SCHEDULE – 9

PERMISSIBLE LEVELS OF CERTAIN CHEMICAL / GAS SUBSTANCES IN WORK PLACE ENVIORNMENT

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
1.	Acetaldehyde	100	180	150	270
2.	Acetic acid	10	25	15	37
3.	Acetone	750	1780	1000	2375
4.	Acrolin	0.1	0.25	0.3	0.8
5.	Acrilonitrile-Skin (S.C.)	2	4.5	-	-
6.	Aldrin - Skin	-	0.25	-	-
7.	Allyl chloride	1	3	2	6
8.	Ammonia	25	18	35	27
9.	Aniline-Skin	2	10	--	--
10.	Anisidin (o-p-isomers) Skin	0.1	0.5	--	--
11.	Arsenic and soluble compounds(as As)	--	0.2	--	--
12.	Benzene(S.C.)	10	30	--	--
13.	Beryllium & compounds (as Be) (S.C.)	--	0.002	--	--
14.	Borontrifluride-C	1	3	--	--
15.	Bromine	0.1	0.7	0.3	2
16.	Butane	800	1900	--	--
17.	2-Butane(Methyl Ethyl Keton-MEK)	200	590	300	885
18.	n-Butyl acetate	150	710	200	950
19.	n-Butyl alchohol. Skin-C	50	150	--	--
20.	Sce/tert Butyl acetate	200	950	--	--
21.	Butyl mercaptan	0.5	1.5	--	--
22.	Cadmium dust and salts (as Cd)	--	0.05	--	--
23.	Calcium oxide	--	2	--	--
24.	Carbyl (sevin)	--	5	--	--
25.	Carbofuran (Furadan)	--	0.1	--	--

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
26.	Carbon disulphide-Skin	10	30	--	--
27.	Carbon monoxide	50	55	400	440
28.	Carbon tetrachloride-Skin (S.C.)	5	30	--	--
29.	Chlordane-Skin	--	0.5	--	2
30.	Chlorine	1	3	3	9
31.	Chloro benzene (Monochlorobenzene)	75	350	--	--
32.	Chloroform (S.C.)	10	50	--	--
33.	Bis (chloro methyl) ether (HC)	0.001	0.005	--	--
34.	Chromic acid & chromates (as Cr) (water soluble)	--	0.05	--	--
35.	Chromous salts (as Cr)	--	0.5	--	--
36.	Copper fume	--	0.2	--	--
37.	Cotton dust, raw	--	0.2	--	--
38.	Cresol all isomer-Skin	5	22	--	--
39.	Cynides (as CN)- Skin	--	5	--	--
40.	Cyanogen	10	20	--	--
41.	DDT (Dichlorodiphenyl trichloroethane)	--	1	--	--
42.	Dometon-Skin	0.01	0.1	--	--
43.	Diazinon-Skin	--	0.1		
44.	Dibutyl phthalate	--	5		
45.	Dichlorvos (DDVP) – Skin	0.1	1		
46.	Dieldrin-Skin	--	0.25		
47.	Dinitrobenzene(al isomers)-Skin	0.15	1		
48.	Trinitrotoluene- Skin	--	1.5		
49.	Diphenyl (Biphenyl)	0.2	1.5	--	--
50.	Endosulfan (Thiodan)-Skin	--	0.1	--	--
51.	Endrin-Skin	--	0.1	--	--
52.	Ethyl acetate	400	1400	--	--
53.	Ethyl alcohol	1000	1900	--	--
54.	Ethylamine	10	18	--	--
55.	Fluorides (as F)	--	2.5	--	--
56.	Fluorine	1	2	2	4
57.	Formaldehyde (S.C.)	1.0	1.5	2	3
58.	Forminc acid	5	90	--	--

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
59.	Gasoline	300	900	500	1500
60.	Hydrazine-Skin (S.C.)	0.1	0.1	--	--
61.	Hydrogen chloride-C	5	7	--	--
62.	Hydrogen cyamide-Skin-C	10	10	--	--
63.	Hydrogen fluoride (as F)-C	3	2.5	--	--
64.	Hydrogen peroxide	1	1.5	--	--
65.	Hydrogen suphide	10	14	15	21
66.	Iodine-C	0.1	1	--	--
67.	Iron Oxide Fume (FO2O3) (as Fe)	--	5	--	--
68.	Isoamyl acetate	100	525	--	--
69.	Isoamyl alcohol	100	360	125	450
70.	Isobutyl alcohol	50	150	--	--
71.	Lead inorg. dusts, dusts &fumes (as Ph)	--	0.15	--	--
72.	Lindane-Skin	--	0.5	--	--
73.	Malathion-Skin	--	10	--	--
74.	Manganese dust and compounds (as Mn)-C	--	5	--	--
75.	Manganeses fume (as Mn)	--	1	--	3
76.	Mercury (as Hg)-Skin- (i) Alkyl compounds (ii) All forms except alkyl vapour	-- --	**0.01** **0.05**	-- --	0.03 --
77.	Aryl and inorganic compounds	--	**0.1**	--	--
78.	Methyl alcohol (Methanol)-Skin	200	260	250	310
79.	Methyl cellosolve (2-Methoxyethanol) Skin	5	16	--	--
80.	Methyl isobutyl ketone	50	205	75	300
81.	Methyl isocyanate-Skin	0.02	0.05	--	--
82.	Napthalene	10	50	15	75
83.	Nickel carbony (as Ni)	0.05	0.35	--	--
84.	Nitric acid	2	5	4	10
85.	Nitric oxide	25	30	--	--
86.	Nitrobenzene-Skin	1	5	--	--

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
87.	Nitrogen dioxide	3	6	5	10
88.	Oil mist. Mineral	--	5	--	10
89.	Ozone	0.1	0.2	0.3	0.6
90.	Parathion-Skin	--	0.1	--	--
91.	Phenol-Skin	5	19	--	--
92.	Phorate (Thimet)-Skin	--	0.05	--	0.02
93.	Phosgene (Carbonyl chloride)	0.1	0.4	--	--
94.	Phosphine	0.3	0.4	1	1
95.	Phosphoric acid	--	1	--	3
96.	Phosphorus (yellow)	--	0.1	--	--
97.	Phosphorus penta chloride	0.1	1	--	--
98.	Phosphorus tri chloride	0.2	1.5	0.5	3
99.	Picric acid-Skin	--	0.1	--	0.3
100.	Pyridine	5	15	--	--
101.	Silans (silicon tetrahydride)	5	7	--	--
102.	Sodium hydroxide-C	--	2	--	--
103.	Styrene monomer (phenyl ethylene)	50	215	100	425
104.	Sulpher dioxide	2	5	5	10
105.	Sulpher hexa fluoride	1000	6000	--	--
106.	Sulphuric acid	--	1	--	--
107.	Tetraethyl lead (as Pb)-Skin	--	0.1	--	--
108.	Toluene (Tolulol)	100	375	150	560
109.	O-Tluidine-Skin (S.C.)	2	9	--	--
110.	Tributyl phosphate	0,2	2.5	--	--
111.	Trichloroethylene	50	270	200	1080
112.	Uranium, natural (as U)	--	0.2	--	0.6
113.	Vinyl chloride (H.C.)	5	10	--	--
114.	Welding fumes	--	5	--	--
115.	Xylene (o, m-, p-isomers)	100	435	150	655
116.	Zinc oxide, (i) Fume (ii) Dust (Total dust)	--	 5.0 10.00	--	 **10**
117.	Zirconium compounds (as Zr)	--	5	--	10
ppm : Parts of vapour or gas per million parts of contaminated air by volume at 25degree C and					
760 mm of Hg.					

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
mg/m^3: milligram of substance per cubic meter of air					
* : Not more than 4 time a day with at least 60 min. interval between successive exposures.					
mg/m^3 = $\frac{\text{Molecular weight}}{24.45}$ x ppm					
G : denotes ceiling limit					
Skin: denotes potential contribution to the overall exposure by the cutaneous route including mucous membranes and eye.					
S.C. : denotes suspected human carcinogen.					
H.C. : denotes confirm human carcinogen.					
TWA : Permissible time weighted average concentration (TWA) (8 hours)					
Silica, SiO_2 (a) Crystalline (i) Quartz (1) In terms of dust count = $\frac{10600}{\%\ \text{Quartz} + 10}$ mppcm (2) In terms of respairable dust = $\frac{10}{\%\ \text{respirable Quartz} + 2}$ mg/ m3 (3) In terms of total dust = $\frac{30}{\%\ \text{Quartz} + 3}$ mg/m3					
(ii) Cristobalite		Half the limits given against Quartz			
(iii) Triovmite		Half the limits given against Quartz			
(iv) Silica, fused		Same limit as for Quartz			
(v) Tripoli		Same limit as in formula in item (2) given against Quartz			
(a) Amorphous silicates		10 mg/m3, total dust			
Asbestos (H.C.)		*2 fiber/ml, greater than 5 cm in length and less than 3 cm in breadth with length to breadth ratio equal to or greater than 3 : 1			
Portland cement		10 mg/m3, total dust containing less than 1% quartz.			
Coal dust		2 mg/m3, respirable dust fraction containing less than 5% quartz.			

Sr. No.	Substances	Permissible Limits of Exposure			
		Time-Weighted average Concentration (TWA) (8 Hrs.)		Short-Term Exposure Limit (STEL) (15 min.)	
		ppm	mg/m^3	ppm	mg/m^3
1	2	3	4	5	6
mppcm = Million particles per cubic meter of air based on impinger samples counted by light-field techniques.					
*As determined by the membrane filter method at 400-450 x magnification (4 mm objective) phase contrast illumination.					
Respirable dust = Fraction passing a size selector with the following characteristics:					

Aerodynamic Diameter (um) (Unit density sphere)	% Passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

8. In the said rules, after Form No. 36, the following Forms shall be added namely: -

Form-37: Form of application for grant of certificate of competency to a person under section-2(1)(l)

Form -38: Form of application for grant of certificate of competency to an institution under section-2(1)(l)

Form -39: Form of certificate of competency issued to a person or an institution under section-2(1)(l)

Form -40: Inspection book

Form -41: Health register of medical officer (certifying surgeon)

Form -42: Health register of factory medical officer

Form-43: Certificate of fitness issued by factory medical officer

Form -44: Test report: dust/fume- extraction system

Form -45: Work Place Environment Monitoring Record

Form-37

[see rule - 3(3)]

Form of Application for Grant of Certificate of Competency to a Person under section-2(1)(l)

1. Name
2. Date of Birth
3. Name of the Organization (if not self-employed)
4. Designation
5. Educational qualification

   (copies of testimonials to be attached)
6. Details of professional experience (in chronological order).

Name of the Organization	Period of service	Designation	Area of Responsibility

7. Membership, if any, of professional bodies.

8. (i) Details of the facilities (examination, testing etc.) at his disposal,

   (ii) Arrangements for calibrating and main-training the accuracy of these facilities.

9. Purpose for which competency certificate is sought (Section or sections of the Act should be stated)

10. Whether the applicant has been declared as a competent person under any other statute" (if so, furnish details)

11. Any other relevant information.

12. Declaration by the applicant.

    I… hereby declare that the information furnished above is true.

    Undertake:-

    (a) That in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization. I will promptly inform the Chief Inspector.

    (b) to maintain the facilities in good working order, calibrated periodically as per manufacturers instruction or as per National Standards; and

    (c) To fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector-cum-Facilitator from time to time.

Place

Date:

Signature

To be filled in by Institution (if employed)

I……certify that Shri…----------whose details are furnished above is in our employment and nominate him on behalf of the organization for the purpose of being declared as a competent person under the Act. I also undertake that I shall notify the Chief Inspector-cum-Facilitator in case the competent person leaves our employment provide and maintain in good order all facilities at his disposal as mentioned above notify the Chief Inspector-cum-Facilitator any change in the facilities (either addition or deletion).

Signature……

Designation……..

Telephone No……..

Date:

Official seal……

Form-38

[see rule - 3(3)]

Form of Application for Grant of Certificate of Competency to an Institution under section-2(1)(l)

1. Name and full address of the Organization.

2. Organization's status

(specify whether Government, Autonomous Co-operative, Corporate or Private)

3. Purpose for which Competency Certificate is sought (specify section(s) of the code)

4 Whether the Organization has been declared as a competent person under this or any other status. If so, give details.

5 Particulars of person employed and possessing qualification and experience as set out in Schedule annexed to sub-rule (1) of Rule 3).

S. No.	Name and Designation	Qualifications	Experience	Section(s) and the Rules under which competency is sought for
1. 2.				

6 Details of facilities (relevant to item 3 above) and arrangements made for their maintenance and periodic calibration.

7 Any other relevant information.

8 Declaration

I…….hereby , on behalf of…….certify that the details furnished above by (Name of Institution) are correct to the best of my knowledge.

I undertake to:-

(i) maintain the facilities in good working order, calibrated periodically as per manufacturer's instructions or as per National Standards; and

(ii) to fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector-cum-Facilitator from time to time.

Signature of Head of the Institution or of the person authorized to sign on his behalf Place and Date

Designation:

Form-39

[see rule - 3(3)]

Form of Certificate of Competency Issued To A Person or an Institution under section-2(1)(l)

I……...in exercise of the powers conferred on me under Section 2(l) of the Factories Act and the rules made there under, hereby Recognize ……. (Name of the Institution) or Shri ……. Employed in.....

(Name of the person) (Name of the organization) to be

a competent person for the organization, purpose of carrying out tests, examinations, inspection and certification for such buildings/dangerous machinery/lift and hoists/lifting machines and lifting tackles/pressure plants/ confined space/ventilation system and such other process used in a factory located in Gujarat State under section and the rules made thereunder.

This certificate is valid from……to…….

This certificate is issued subject to the conditions stipulated hereunder:-

(i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act

and the rules made thereunder;

(ii) Tests, examinations and inspections shall be carried out under the direct supervision of the competent person or by a person so authorized by an institution recognized to be a competent person.

(iii) The certificate of competency issued in favour of a person shall stand cancelled if the person declared competent leaves the organization mentioned in this application;

(iv) The Institution recognized as a competent person shall keep the Chief Inspector-cum-Facilitator informed of the names, designations and qualification of the persons authorized by it to carry out tests, examination and inspections.

(v) Station :

Date: Official Seal

Signature of the Chief Inspector-cum-Facilitator

Note: A separate certificate should be issued under each relevant section. A person or an institution may be recognized competent for the purpose of more than one section of the Act. Any Other conditions may be added by the Chief Inspector-cum-Facilitator

*Strike out the words not applicable

FORM NO. 40

[see rule 41(11)]

Inspection Book

Page	Heading
Covering page	Inspection Book for Inspectors of factories and Certifying Surgeon only
Back of the covering page	Manager's remarks regarding action taken, if any
Every numbered page	Inspector's or Certifying Surgeon's remarks.
Back of every numbered page	Manager's remarks regarding action taken, if any.

FORM NO. 41

Health Register of Medical Officer (Certifying Surgeon)

(In respect of persons employed in occupations declared to be dangerous operations under section 87).

Name of Certifying Surgeon.

(a) Mr. …….. From ……..To…….

(b) Mr. …….. From ……..To…….

(c) Mr. …… From ……..To…….

Serial No.	Works No.	Name of workers	Sex	Age (last birth day)	Date of employment of present work	Date of leaving or transfer to other work
1	2	3	4	5	6	7

Reason for leaving, transfer or discharges	Nature of job or occupation	Raw material or By-product handled	Date of medical examination by Certifying Surgeon Result of Medical Examination
8	9	10	11

Note :

(i) Column 8.-Detailed summary of reason for transfer or discharge should be stated.

(ii) Column 11.-Should be expressed as fit/until/suspended.

If suspended from work, state period of suspension with detailed reason	Certified fit to resume duty on with signature of Certifying Surgeon	If certificate of unfitness or suspension order issued to worker	Signature with date of Certifying Surgeon
12	13	14	15

FORM NO. 42

Health Register of Factory Medical Officer

1. Name and Address of Factory
2. Serial Number in the Register of adult Workers :
3. Name of Worker :
4. Sex :
5. Date of birth :

Department Works	Name of Hazardous process	Dangerous process/operation	Nature of job or occupation	Raw materials, products or By-products likely to be exposed to	Date of posting	Date of leaving/transfer to or transfer	Reasons for Discharge/ leaving or transfer	Medical examination Results therefore				If declared unfit for work				
								Date	Signs and symptoms Observed during examination	Nature of tests & results thereof	Result Fit/Unfit	Period of temporary Withdrawal from that work	Reasons for such withdrawal	Date of declaring him Unfit for that work	Date of issuing fitness Certificate	Signature with date of the factory Medical Officer / the Certifying Surgeon.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Note : 1. Separate page should be maintained for individual worker.

2. Fresh entry should be made for each examination.

FORM NO. 43

CERTIFICATE OF FITNESS issued by Factory Medical Officer

Serial number :

I certify that I have personally examined (name)…… ……son of (Father's name) ……..residing at (address) ……..who is desirous of being employed as (designation) ……in (process, department and factory) ……and that his age, as nearly as can be ascertained from my examination, is ……. years, and that he is, in my opinion, fit/unfit for employment in the above mentioned factory as mentioned above.

2. He may be produced for further examination after a period of ……

3. The serial number of the previous certificate is…….

Signature or left hand

thumb impression of person examined:

Signature of Factory Medical Officer

Form No.44

(Prescribed in SCHEDULE-XXV and XIV)

TEST REPORT: DUST/FUME- EXTRACTION SYSTEM

1. Description of system :
2. Hood :
   - (a) Serial No. of Hood :
   - (b) Contaminant captured :
   - (c) Capture velocities (at points to be specified design value, actual value.) :
   - (d) Volume exhausted at hood. :
   - (e) Hood static pressure. :
3. Total pressure drop at
   - (a) joints. :
   - (b) Other points of system (to be specified) :
4. Transport velocity in dust/Fume (at points along dusts to be specified) :
5. Air cleaning device :
   - (a) type used. :
   - (b) Velocity at inlet. :
   - (c) Static pressure at inlet :
   - (d) Velocity at outlet :
6. Fan.
   - (a) Type used. :
   - (b) Volume handled. :
   - (c) Static pressures. :
   - (d) Pressure drop at outlet of fan. :
7. Fan motor
   - (a) Type
   - (b) Speed and hours power.
8. Particulars of defects, if any, disclosed during test in any of the above components.

I, certify that on this …….. day of …… the above dust/fume extraction system was thoroughly and (so far as its construction permit) made accessible for through examination.

I, further certify that on said date, I thoroughly examined the above dust/fume extraction system including its components and fittings and all the above is true report of any examination.

Signature:

Qualification:

Address:

Dated

If employed by a company or association give name and address.

FORM – 45

Work Place Environment Monitoring Record

1. Name of the Department / Plant:

   Date:

2. Raw materials, by-products and finished products involving in the process.

3. Particulars of sampling.

Sr. No.	Location/ Operation Mentioned	Identified contaminant	Sampling instrument used	Airborne Contamination		Average	TWA concen-tration (As given in second schedule	Reference method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name of person taking samples
				Number of samples	Range							
1	2	3	4	5	6	7	8	9	10	11	12	13
1.												
2.												
3.												
4.												
5.												

By order and in the name of the Governor of Gujarat,

DRASHTI SHAH,

Deputy Secretary to Government.

Government Central Press, Gandhinagar.

Signature Not Verified
Signed by : BHOLUSINGH G THAKUR
Senior Manager
Government Central Press,
Gandhinagar
Date : 2025.12.24 07:35:18 IST